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Textile World

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A Tonic—and a "Chaser"

OF 296 mill news items in the last five issues of Textile World, 117 items (or about 40% of the total) told of increased operating schedules, while 18 items (or about 6% of the total) reflected decrease in such schedules.

The remaining items included 38 (or 13%) on additions to existing plants; 21 (or 7%) on modernization of plants; 42 (or 14%) on activities of new companies; 23 (or 8%) on bankruptcies, liquidations, and forced sales; and 37 miscellaneous items on corporate changes and other developments which did not affect the operating schedules or capacity of the plants concerned.

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We do not offer this evidence as positive information. It does not mean, for instance, that 40% of the plants of the industry are increasing schedules while 6% are decreasing them.

It does, however, furnish very significant relative indication of current trends. These items are gathered by some 75 field correspondents and staff editors in all important textile centers of the country. If there are 117 instances of improved operations reported, against only 18 cases of lower schedules, it is safe to assume a major movement toward higher activity level through the industry.

Furthermore, these 117 items did not involve merely one division. There were 41 such reports from the cotton branch, 26 each from wool and knit goods, 15 from silk, 3 from rayon, 2 from finishing plants, and 4 from miscellaneous plants.

So that readers may visualize the type of these 117 items, we reprint below a few taken at random:

Ruby Cotton Mills, Inc., Gastonia, N. C., manufacturers of combed hosiery and underwear yarns, are now operating on a full-time schedule.

Charles Mill Co., Red Springs, N. C., is working overtime to fill orders for silk and rayon dress goods and shirtings.

Anchor Knitting Mills of **Robert Ablett & Co., Inc.,** Whitesboro, N. Y., have enlarged their force.

Bigelow-Sanford Carpet Co., Amsterdam, N. Y., has increased operations by enlarging its force.

Champlain Silk Mills, Whitehall, N. Y., will resume operations on a large scale immediately, employing about 1,200 persons. The mills have been running on a part-time basis for several months. Opening of the mills on a full-time basis will result in a weekly payroll of about $30,000. The company has orders booked which will necessitate capacity operations until spring at least.

Danvers Bleachery & Dye Works, Peabody, Mass., have taken on 200 extra hands, making a total of 800, to fill large orders of bed linen. New schedule is expected to continue through the winter.

Laughlin Textile Mills, Waterford, N. Y., tapes, braids and narrow fabrics, are maintaining full-time schedules with a normal force.

Granite Cordage Co., Granite Falls, N. C., one of the Shuford group of mills, has returned to its 60-hour schedule of day work. It does not operate at night.

Ninety-Six (S. C.) Cotton Mill, of which J. C. Self is president, is running full-time after having been on a curtailed schedule.

Clark-Cutler-McDermott Co., Franklin, Mass., is running at capacity night and day. The chief product at present is a fabric used for miniature golf greens. An addition, 150x60 ft., is under construction.

Peters Hosiery Mill, New Cumberland, Pa., has resumed production on close to normal schedule after a curtailment of several weeks.

Aldora Mills, Barnesville, Ga., tire fabrics, which were closed for four months, resumed operations Oct. 13. Night work has been eliminated, but the plant will run to capacity on a day schedule.

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Six months ago, these 117 items would have alarmed us. Today, they are a source of gratification because, first, we know there has been sufficient improvement in demand to justify conservative increases in operating schedules; and, second, we are confident that the industry has learned its lesson and will not push such increases beyond the level warranted by the statistical position.

After long, lean years, it is a relief to be able to point with pride to signs of healthy recovery, rather than to be forced to shout warnings of overproduction at every indication of increased activity.

Textile manufacturers, during recent years, have been given large and much-needed doses of antitoxin. If, as we believe, that has had its effect, they may now safely imbibe the tonic of encouragement and buoyancy furnished by an up-swing—particularly if the tonic is accompanied by a "chaser" of determination not only to sell goods, but to make a profit.

The Week in Textiles

Silk Deliveries Set Record . . .

THE SILK ASSOCIATION announced this week that the unprecedented total of 61,937 bales of raw silk were delivered to mills during October. This indication of booming production is largely artificial, as it represents belated and concentrated buying usually distributed over a wider period. . . . . Industrial depression made broadsilk mills, a major consuming market, hesitant, and October found them with stocks so low that they were forced to cover for immediate use. The big deliveries figure helped the tone of the raw silk market, but not to any great degree, as it had been anticipated in earlier price advances. It compares with a 10-month average for the year so far of 46,947 bales.

More Wool Consumed . . .

TOTAL QUANTITY of wool going into manufacture, as reported by the Department of Commerce for September, was larger than for August. Reduced to grease equivalent the total for August was 33,761,-070 lb., compared with 38,082,737 lb. for September.

Hosiery Sales Improving . . .

DOMESTIC HOSIERY sales in September were about 1,000,000 doz. pr. ahead of August, but nearly 900,000 doz. pr. behind September last year, according to figures just issued by the Department of Commerce. The decline from 1929 was about equally divided among all groups. The hosiery output in September, 1929, totaled 4,934,237 doz. pr., against 4,091,900 in the same month this year; net September shipments this year were 4,807,877 against 5,461,531 in September, 1929. . . . . Reports show various interesting features: September, 1930, cancellations were less than half those in September, 1929, and men's silk-and-cotton hosiery output doubled in the current September, contrasting with other divisions, most of which showed a 15% decline.

Gains in Finishing . . .

FURTHER GAINS in activity of the finishing industry were recorded in October over September, according to the monthly report of the National Association of Finishers of Cotton Fabrics. . . . . Following are percentages of activity of various processes, the first figure being October, the second September: White, 47% and 45%; dyed, 53 and 55; fast black, 22 and 23; logwood, 41 and 29; prints, 55 and 51

Women's Right to Work . . .

OFFICERS OF the National Woman's Party personally presented to the heads of The Cotton-Textile Institute on Oct. 30, their party's official protest against the Institute's recommendation of eliminating night work for women and minors. . . . . Mrs. Harvey W. Wiley, national chairman of the Woman's Party, in company with Mrs. Florence Bayard Hilles of Delaware and Mrs. Elizabeth Selden Rogers and Mrs. Jane Norman Smith of New York, discussed the question of dis-

The Textile Outlook

Increase in volume of cotton goods movement is proving encouraging to men in this business and also to other branches of textile industry which hope soon to feel the breath of the same trade wind. Mill operating schedules are improving and prices are stronger. Merchants regard the movement as all in the right direction but recognize that caution and skill must still constantly be exercised. Profit margins are still inadequate. . . . More wool goods business was done this week than heretofore, but it was principally spot and nearby to satisfy last minute needs for fall distribution. Overcoatings have been particularly active. . . . Price uncertainty makes knit goods buyers cautious. Several price cuts in full-fashioned lines confirm buyers' attitude. Underwear attracts interest only so far as spot goods are concerned. . . . Raw silk was weaker again after reports of record deliveries to mills in October. Thrown silk holds its own.

The Business Outlook

"As the country impulsively mobilizes generosity to tide over a hard winter by improvised dole system and roundabout inflation, business is sliding further into final stage of depression, under weight of still unbroken financial fatalism, business inertia and popular fear. Our preliminary index for week ended Nov. 1 fell further, from 83.4% of normal to 81.5%, reflecting continued relaxation of industrial activity and primary distribution. . . The public is responding to "Buy Now" campaigns and demonstrating the latent consumptive capacity of the market; but neither business enterprise nor financial support are forthcoming to reciprocate this gesture of confidence by supplying goods, and thereby justifying it through expanding employment. Even the long-suffering step-children of American prosperity—textiles, coal, building, agriculture—are now making the bravest display of energy, courage and enterprise and doing most to support the family."

—The Business Week

charging women with George A. Sloan, president of the Institute, and Walker D. Hines, chairman of its board. . . . . The women argued that work is an inalienable right of every individual, and that any regulation which does not apply equally to both sexes interferes with that right. Their organization favors the elimination of night work for both men and women without discrimination.

Men More Conservative . . .

ANALYSES OF men's wear suiting orders as compiled by the Wool Institute, Inc., show that plain fabrics are coming in for more attention from buyers than a year ago. In fancy worsted suitings 27% of orders of their members in September called for plain effects as compared with 4% in same month last year. . . . . In fancy woolens under $1.50 per yard, 69% called for plain and small weaves as compared with 50% a year ago; in fabrics more than $1.50 per yard, 89% orders called for plain and small weaves against 54% a year ago.

Cotton Better in Grade . . .

COTTON OF the present crop, ginned prior to Oct. 1, 1930, was better in grade and somewhat different in staple from the ginnings for the corresponding period last year, according to the report of the Bureau of Agricultural Economics issued Oct. 31. Of about 6,300,000 bales of American upland cotton ginned prior to Oct. 1, 93.4% was estimated to be white in color, compared with 92.6% ginned in the corresponding period last year; 87.9% was white, middling and better, compared with 82.8% last year. . . . . The estimates of staple of upland cotton show 14.1% shorter than $\frac{7}{8}$ in., compared with 15.7% last year; 78.2% $\frac{7}{8}$ to $1\frac{1}{32}$ in., compared with 71.8%; and 7.7% $1\frac{1}{16}$ and over compared with 12.5%.

Consumer Clothing Costs . . .

THE OPPORTUNITIES for economical buying offered the public by current prices in women's and men's clothing is impressively revealed in a survey now being conducted by the Marine Midland group of 18 New York State banks. . . . . Every day is bargain day for wearing apparel, according to the survey, which showed a 28% reduction in the prices of women's clothing as compared with prices a year ago. Men's wear is 13% cheaper. Values in children's clothing will be surveyed later. Percentage of reduction is based on comparative costs for a complete outfit.

Chinese Ask Membership . . .

ONE OF the latest applications for membership in The Cotton-Textile Institute has just been received from representatives of an important cotton mill in China. Their letter was similar to membership applications made from time to time by cotton manufacturers in Canada and Mexico. . . . . In reply George A. Sloan, president of the institute, expressed appreciation for the interest which prompted the inquiry but explained that there was no provision for membership of mills in the institute other than those located in the United States.

All Industry Is Watching Textiles

THE eyes of the industrial world are turned toward textiles. They are watching a dramatic episode, as an old industry throws off the shackles of tradition, and dons modern armor in the fight for its share of the nation's income. But industry in general is not interested in this development merely as a dramatic episode. It has a stake in the future of textile maufacture, one of the great basic industries whose fortunes affect those of practically all producers, distributors and consumers.

TEXTILE WORLD is aware of the extent of this attention from the outside. However, to present it concretely to our readers and to the industrial public, we are securing statements from outstanding leaders in other industries.

Nickolas Muray

Matthew S. Sloan, president of New York Edison Co.

Below, we print the first of these testimonials — from Matthew S. Sloan, president of The New York Edison Co.:

"I heartily congratulate the textile industry on its comprehensive program for improvement. In its proposals for industrial cooperative activities, technical research, statistical research, better industrial and public relations and plant modernization, it will be following lines of activity carried on and proved sound by the electrical industry.

"Since health in any one line of business is essential to the health of all, I am sure the textile industry will have the good wishes of all others in the working out of this program."—Matthew S. Sloan

How Profitable Are Textiles?

By H. S. Davis

Industrial Research Dept., University of Pennsylvania

THREE out of five textile manufacturing corporations tend to be profitable—at least, three out of five textile corporations, on the average, paid income tax during the period, 1920-1928. In only one year, 1921, did the industry fall appreciably below this ratio—that year, about half of the textile firms paid some income tax.

A similar situation exists in the non-textile manufacturing industries—that is, on the average, 1920-1928, three corporations earned profits to every two incurring deficits. Like textiles, the only marked departure from this average came in 1921, when slightly less than half of the non-textile manufacturing companies reported an excess of income over disbursements. It is interesting that one of the so-called "depressed industries" fared no worse than the general run of manufactures in the ratio of profitable to unprofitable corporations.

Methods of Profit Analysis

Obviously this is only one view of the profit situation in textiles; and even in itself calls for refinement since it refers to a group of over 10,000 corporations with no classification as to products. Before proceeding to this refinement and to other descriptions of profit conditions, let us review a few of the more common methods of profit analysis. For some purposes, the profit margin on sales may be quite adequate. In more specific terms, this is the ratio of operating profit to net sales. Such a ratio has its legitimate use in studying industries with similar rates of inventory turnover. Between individual mills it may not be a measure of relative efficiency but merely an indication of a difference in sales policies—one stressing volume, the other staking success on quality.

The stockholder, naturally, finds earnings per share a measure of profitableness more suited to his needs. In general form this is the ratio of net profit to net worth and has significance for comparative purposes among those mills which are financed in a similar fashion.

Profit return on invested capital is a measure of wide utility. Assuming profits in this connection to mean earnings before bond interest and dividends, this ratio is probably the most useful of all "yardsticks" for determining the relative earning power of two or more corporations, of two more industries. Direct comparison has meaning here regardless of any differences between mills or industries arising out of the nature of their products, sales policies, or methods of securing capital. A variation of this measure to which analysts sometimes resort is the profit return on assets, or the number of dollars of assets that are required to obtain one dollar of net profit.

Adequately to measure the course of profits in textiles on an industry basis would require financial statements from a representative number of manufacturers. The few textile income statements now published would hardly meet that specification. So we turn for textile financial data to those annual reports of the Bureau of Internal Revenue which deal with statistics of corporation income. Here are available certain income figures which the Bureau has tabulated from the tax returns of all corporations, and has classified by industries. For textile manufactures, these figures are available in the form of separate totals for cotton goods, wool goods, silk and rayon goods, knit goods, and clothing. (Unless

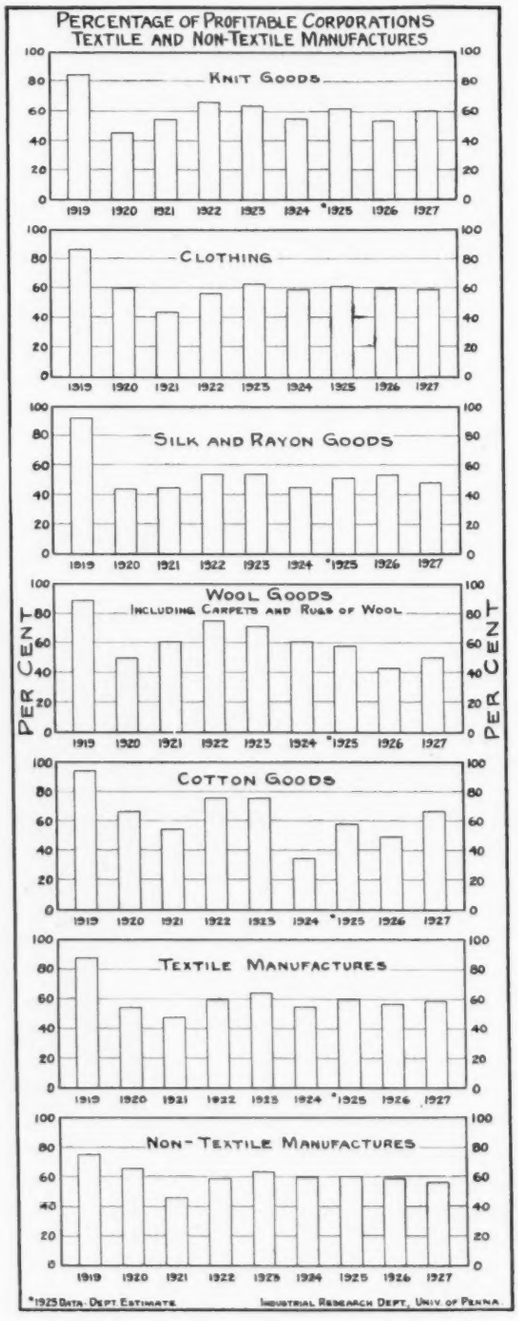


Chart I

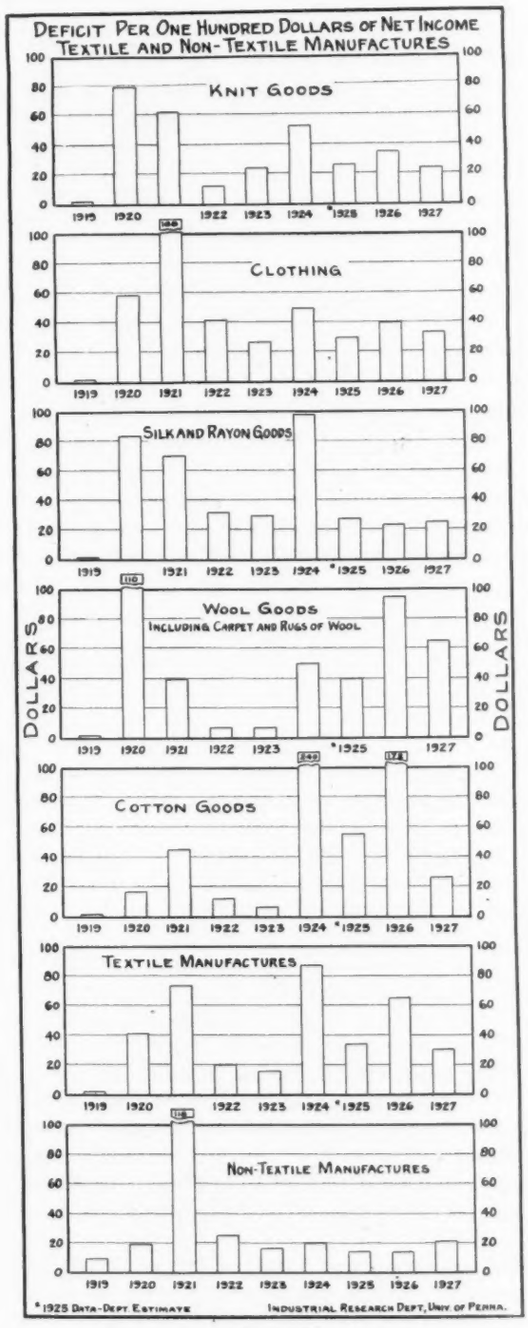


Chart II

otherwise noted, the term "textiles" in this discussion refers only to these major textile manufactures.)

While this source does not yield data necessary to a complete financial analysis of the textile industry, certain conclusions can be drawn regarding: (1) the number of profitable corporations; (2) the price of profits—that is, amount of industry deficit incurred for each dollar of industry net income; (3) the profit margin on gross income; (4) the profit return on assets.

Percentage of Profit Makers

In 1927, 6,092 textile corporations out of a total of 10,375 reported profits on their tax returns; or, as indicated on Chart I, 59% of the companies in major textile manufactures operated at a profit in that year. This approach gives the 1,000 spindle mill as much weight as the organization operating 100,000 spindles.

If we disregard the post-war boom of 1919, "prosperity" had its widest distribution in wool and knit goods in 1922. In cotton, there was little difference between 1922 and 1923, while neither silk nor clothing experienced an outstanding year in number of successful firms. The highest percentages of profitable firms are recorded for wool goods, in 1922, 74.7%; cotton goods, in 1923, 75.7%. It will be noted from Chart I that both wool and cotton have sustained considerable decline from those levels in recent years, although cotton recovered a bit in 1927—67% of the cotton firms paying income tax that year. Nearly half of the wool goods corporations in the country, 292, either lost money or were inactive in 1927.

The percentage of profitable corporations in the knit goods and clothing industries has not only been more uniform over the period, 1920-1927, but in recent years has moved at a higher level than in wool or cotton goods. Reference to Chart I confirms this statement: approximately 60% of both the knit goods and clothing firms earned profits in recent years; while the success ratio for wool averaged 53% and for cotton, 55%. This situation might be explained by saying that the success of a knitter or a garment manufacturer is not dependent upon consumer preference for a particular fiber. In the case of silk, this observation has less support: as much uniformity exists in its success ratio over the period as in knit goods or clothing, although at a lower level, namely, 50%.

A great number of unsuccessful companies in an industry may be no indication of a small volume of profit in that industry. The automobile trade is a case in point: 1919 was the only year of the period, 1919-1927, in which more than 50% of the automobile manufacturers reported net income; yet in the automobile industry deficits in no year except 1921 amounted to more than 20% of that industry's net income. So in order to know something of the profitableness of an industry it is well to compare the total deficit incurred by the unsucessful corporations with the total profit or net income accruing to the successful corporations. Such a comparison measures the extent to which the industry is keeping out of the "red"; if deficits balance income, the industry as a whole is an unprofitable venture.

A deficit of $18 per $100 of net income or operating profit has been the experience of non-textile manufacturers since the deflation of 1921. The textile ratio for the same period stands at $37 per $100; or we may say that twice as much money is lost in textiles as in non-textile manufactures, relative to industry net income. Chart II entitled "Deficit Per One Hundred Dollars of Net Income" gives the story by years, 1919-1927. The erratic course of textile profits is at once evident; a study of the major groups will tend to account for these "saw-tooth" movements.

In 1923 cotton and wool lost only $6 and $7, respectively, per $100 of profits. Chart II can be scanned closely, and no better record noted for the other textiles, 1920-1927. In fact silk and knit goods never dropped below the $10 level; and losses in the clothing business were always above $25 per $100 of net income. The year 1924 was about as destructive to textile profits as any year on the record. Silk and rayon losses practically equaled profits that year, and the cotton industry was far in the "red"—$240 in losses to $100 of income.

Thus far the relation of losses to profits has been considered chiefly in terms of particular years. But what about the post-war period? Which textile field has been more successful in keeping deficits at a minimum over

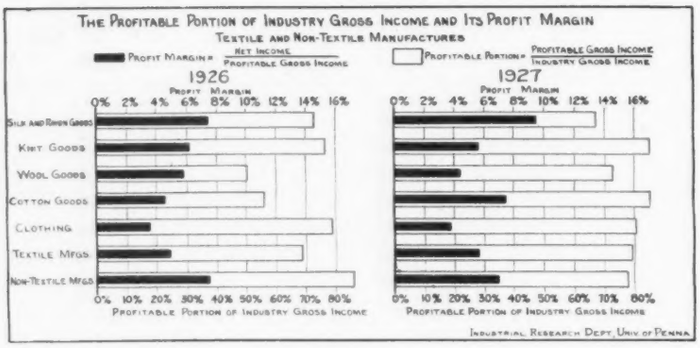

THE PROFITABLE PORTION OF INDUSTRY GROSS INCOME AND ITS PROFIT MARGIN
TEXTILE AND NON-TEXTILE MANUFACTURES
PROFIT MARGIN = NET INCOME / PROFITABLE GROSS INCOME
PROFITABLE PORTION = PROFITABLE GROSS INCOME / INDUSTRY GROSS INCOME
1926
1927
PROFIT MARGIN
0% 2% 4% 6% 8% 10% 12% 14% 16%
SILK AND RAYON GOODS
KNIT GOODS
WOOL GOODS
COTTON GOODS
CLOTHING
TEXTILE MFGS.
NON-TEXTILE MFGS.
0% 10% 20% 30% 40% 50% 60% 70% 80%
PROFITABLE PORTION OF INDUSTRY GROSS INCOME
INDUSTRIAL RESEARCH DEPT. UNIV. OF PENNA.

Chart III

TABLE I—DEFICIT PER $100 OF NET INCOME

	1919–1927	1922–1927
Knit goods	$29.05	$27.50
Clothing	37.27	34.85
Silk and rayon goods	28.52	32.30
Wool goods	29.07	32.70
Cotton goods	28.28	49.20
Textiles	30.92	37.10
Non-textile manufacturers	21.40	18.05

several years? Poor income years may be more than offset by years of record earnings. Table I balances industry losses against profits for the period, 1919-1927, and 1922-1927.

Knit goods, as may be seen from this table, is the low deficit industry among textiles, considering a period of years rather than a particular year. Deficits relative to income increased for the yarn and fabric producers in the later period, 1922-1927, while both clothing and knit goods obtained a decline. Figures for the years, 1922-1927, eliminate the influence of "war prosperity and depression," and so doubtless have more significance to present times. It may be surprising to see cotton in a more unfavorable position than wool. Inclusion of carpet and rugs with wool goods may furnish some explanation.

Margin for Profitable Portion

Fortunately the Bureau of Internal Revenue published certain figures in its reports for 1926 and 1927 which permit us to determine the relation of profits to sales for the profitable corporations in the major textile groups. This relation is more exactly described as the ratio of net income (less income tax) to profitable industry gross income, but we may think of this ratio as expressing the profit margin on sales, since receipts from sales comprise 97.8% of textile "gross income," and "net income" comprises 95% of total textile profits. On this basis, some notion of the return on sales may be obtained from Chart III, "The Profitable Portion of Industry Gross Income and Its Profit Margin."

As will be discovered on examination, this chart presents in addition to the profit margin of the successful section of the industry, the percentage of total industry gross income or sales on which this margin was secured. For example, we note in 1926 that the black bar representing the profit margin of the successful section of the silk and rayon industry stands at 7.5%; and if we consult the corresponding outline bar, we learn that this margin was obtained on 73% of the total gross income of the silk and rayon industry. From the standpoint of high sales return, or more accurately profit margin on gross income, the silk and rayon industry is clearly the most profitable textile field.

Wool goods presents a decided contrast to cotton in the trend of profit margins. Both industries in 1927 met some curtailment in total volume of business, but as we may read from Chart III, the percentage of this business done at a profit increased, 1926 to 1927, from 51% to 73% in the case of wool, and 57% to 86% in the case of cotton. Under these conditions cotton pushed its profit margin to 7.5% as compared with a return of 4.5% the previous year. Profitable wool corporations were not so fortunate—their return on sales, or profit margin dropped from 5.9% in 1926 to 4.4% in 1927.

The size of the profit margin is not a real check on the efficiency of mill management since the matter of sales volume is so intimately tied up with sales policies, and those policies cannot be tested by merely comparing the profit margins of two mills, but require additional analysis. It is more significant to know what return on capital investment a particular management or industry is obtaining. However, the form in which our data is available has made it unwise to apply this measure here. We have therefore preferred to calculate the profit return on assets.

As the reports of the Bureau of Internal Revenue confine their attention to major manufacturing fields, we are not able to measure the profit situation in terms of

TABLE II—MEASURES OF PROFITABLENESS

All Textile Manufactures

	Per Cent 1926	1927
Successful corporations*	57.4	59.5
Profitable portion of gross Income*	69.1	80.5
Profitable portion of assets	62.1	78.1
Profit margin on profitable gross income*	5.1	5.8
Profit return on profitable assets	7.2	7.2

*As all textile industries included here, these measures differ slightly from those appearing elsewhere in the discussion dealing only with the major textile industries.

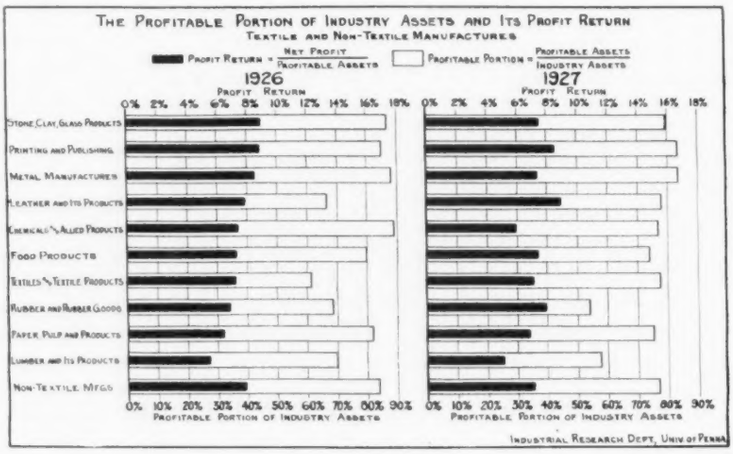

THE PROFITABLE PORTION OF INDUSTRY ASSETS AND ITS PROFIT RETURN
TEXTILE AND NON-TEXTILE MANUFACTURES
PROFIT RETURN = NET PROFIT / PROFITABLE ASSETS
PROFITABLE PORTION = PROFITABLE ASSETS / INDUSTRY ASSETS
1926
1927
PROFIT RETURN
0% 2% 4% 6% 8% 10% 12% 14% 16% 18%
STONE, CLAY, GLASS PRODUCTS
PRINTING AND PUBLISHING
METAL MANUFACTURES
LEATHER AND ITS PRODUCTS
CHEMICALS & ALLIED PRODUCTS
FOOD PRODUCTS
TEXTILES & TEXTILE PRODUCTS
RUBBER AND RUBBER GOODS
PAPER, PULP AND PRODUCTS
LUMBER AND ITS PRODUCTS
NON-TEXTILE MFGS.
0% 10% 20% 30% 40% 50% 60% 70% 80% 90%
PROFITABLE PORTION OF INDUSTRY ASSETS
INDUSTRIAL RESEARCH DEPT. UNIV. OF PENNA.

Chart IV

assets for individual textiles. Information is available in these reports however, which permits the calculation of this measure of profitableness for all textiles as a group, and for certain non-textile manufactures. (Textiles here includes not only the major textiles, but also floor coverings, furs, felts, linen, cordage, etc.) The results of these calculations for 1926 and 1927 form Chart IV, "The Profitable Portion of Industry Assets and its Profit Return."

Earnings Related to Assets

The profitable textile corporations as a group found it necessary to use something like $14 of assets to earn $1 of net profit in the years 1926 and 1927, or as we may read from Chart IV, the earnings of the successful textile corporations approximated a return of 7.2% on total assets. That does not mean much if only a small share of the textile industry is successful. Here we may secure further assistance from the same chart. The outline bars of Chart IV show the percentage of assets in the textile industries which earn the profit indicated by the black bars. For textiles we see that in 1926 only 62% of the assets of the industry belonged to successful corporations; in 1927, 78% of the industry's assets were earning profits which approximated a return of 7.2%.

A return of 7% seems high for a "depressed" industry, but as we may find from the chart, the percentage of textile assets earning profits was lower in 1926 than for any of the other manufacturing industries. The textile improvement in 1927 is indicated by the fact that only three other lines of manufacture out of the nine charted exceeded textiles in (*Continued on page 69*)

Tariff-Problem in Rayon Export to S. A.

HOW can the American rayon industry develop its export market in Latin America? This problem which is particularly in the foreground at present, in view of the rayon surplus of about 25,000,000 lb. here, and also the survey on the subject being conducted by the Department of Commerce through its representatives in the Central American countries, can be understood more completely when one reviews the present rayon yarn situation in these southern countries.

The consumption of rayon yarn in Central and South America may be conservatively estimated at between 3,000,000 and 4,000,000 lb. per annum. There is likely to be a marked extension of this consumption, but not in the immediate future, as general trading conditions are against any such move. Based on present prices of rayon yarn the Argentine and Brazil customs duties amount to between 20 and 25% of the value. In Cuba the United States preference is such as to bring down the duty to about 15%. The Mexican tariff works out at between 35 and 40%, but on the other hand rayon yarns imported into Chile are duty free.

Expands in Argentine

In the Argentine business showed a steady expansion up to 1928 and was well maintained during 1929. There is keen competition between German, Italian, Dutch, Swiss and British firms for the business. No official import statistics are available for recent months. Germany's exports to the Argentine during the first half of the current year totaled 162 tons, which shows a very marked falling off when compared with previous years. During the same period Italian exports to the Argentine amounted to 81 tons against 111 tons in the previous year. Dutch exports during the first half of the current year amounted to 80 tons, which compares with 196 tons during the whole of 1929. Switzerland has been increasing her trade. It will be seen from these figures that the economic conditions have acted very much against the importation of rayon yarns during 1930.

The present demand in Brazil is very much lower than that in the Argentine, though here again there are big potentialities. The Matarazzo plant in Sao Paulo, however, is likely to take advantage of at least a portion of the call for yarns. Imports in 1927 amounted to 298 tons. There was a big jump to 742 tons in 1928 and a fall of 319 tons in 1929. Germany and Great Britain compete very largely for this trade, but German imports during the first half of the current year were only 38 tons against 108 tons in the whole of 1929. British business with Brazil has been at a very low ebb for some months, and Italy has also lost ground. So far as Chile is concerned, Britain has always held a high position in this trade, though Germany and Italy have caused much competition. The latest statistics show that the importations of yarn in 1927 amounted to 211 tons. This figure was increased to 323 tons in 1928. Britain appeared to lose considerable ground during 1929, but there has not been any further loss during the present year. Germany, on the other hand, made considerable headway last year, and though she has not maintained her business this year the falling off has not been marked.

Cuba Favors U. S.

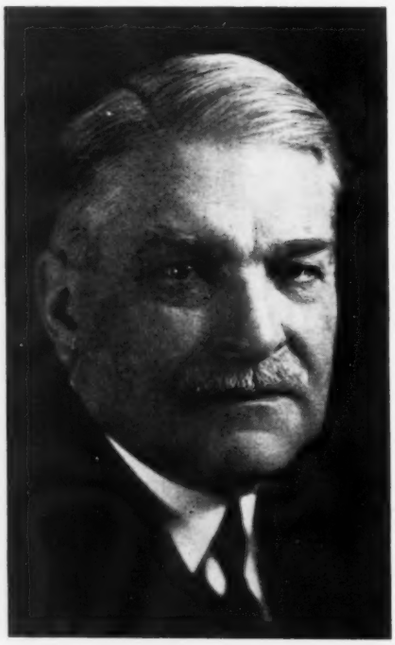
As explained above, the United States preference in Cuba is very considerable, and few countries apart from Germany apparently make any marked effort to get into the market. In Mexico, despite the comparatively high tariff wall, there is considerable importation of rayon yarns, and naturally the United States takes a prominent part in this trade. The total imports during the first ten months of 1929 amounted to 508 tons against 410 tons in the corresponding period of 1928. Germany increased her shipments from 106 tons to 184 tons, while the United States more than doubled her trade. Italy also made progress, but Britain and Switzerland fell off. There has been considerable progress during 1930, Germany sending 156 tons in the first half of the year, while the United States has been shipping about 10 tons a month for some time, and is increasing this amount.

There are few statistics available regarding the imports of rayon yarns into Uruguay, but it would appear that this trade is shared to a very large extent by Germany, Italy, Britain and Holland, the first-mentioned being by far the most important importer. Likewise the trade of Peru is still a small matter, though it is interesting to note that according to the latest statistics the United States is the largest importer followed by Germany, Britain and Italy, in the order named.

Dr. S. W. Stratton *Heads* U. S. Institute for Textile Research

THE plan for organized fundamental technical research in the textile industry, as represented by the United States Institute for Textile Research, took definite form at the first annual meeting of that Institute in New York, Thursday of this week, when permanent organization was effected and Dr. Samuel Wesley Stratton was elected to the presidency.

In addition to Dr. Stratton, the following officers and directors were elected: Vice-presidents: H. R. Fitzgerald, president, Riverside and Dan River Cotton Mills, Danville, Va.; T. T. Clark, president, Talbot Mills, North Billerica, Mass.; Albert F. Bemis, Bemis Brothers Bag Co., Boston, Mass.; E. A. Clements, president, Globe Knitting Mills, Grand Rapids, Mich.; W. R. Blum, United Piece Dye Works, Lodi, N. J.; and H. V. R. Scheel, vice-president, Botany Worsted Mills, New York. Treasurer: E. N. Hood, treasurer, Pequot Mills, Salem, Mass.



Dr. S. W. Stratton, President, U. S. Institute for Textile Research

Charles H. Clark, temporary secretary of the Institute, was appointed permanent secretary.

The following directors were chosen to serve for three years: Albert F. Bemis; C. W. Causey, treasurer, Pomona Mills, Greensboro, N. C.; A. R. Pierce, Pierce Mfg. Corp., New Bedford, Mass.; T. T. Clark; W. R. Blum; D. F. Edwards, Saco-Lowell Shops, Boston; H. R. Fitzgerald. The following directors were chosen to serve for two years: J. T. Broadbent, president, Standard Textile Products Co., New York City; E. N. Hood; Weston Howland, treasurer, Warwick (R. I.) Mills; B. E. Geer, treasurer, Judson Mills, Greenville, S. C.; W. Scott Libbey, treasurer, W. S. Libbey & Co., Lewiston, Me.; E. A. Clements; Alban Eavenson, Eavenson & Levering, Camden, N. J.; Prof. L. A. Olney, Lowell (Mass.) Textile Institute. The following directors were chosen to serve for one year: Chas. B. Nichols, treasurer, Otis Co., Three Rivers, Mass.; W. F. Edwards, United States Testing Co., Hoboken, N. J.; W. C. Taylor, secretary, Southern Textile Association, Charlotte, N. C.; Allen R. Mitchell, Jr., A. R. Mitchell & Sons, Philadelphia; P. J. Wood, vice-president, Oriental Silk Printing Co., Paterson, N. J.; P. A. Johnson, treasurer, Aspinook Co., Jewett City, Conn.; H. V. R. Scheel; Dr. E. H. Killheffer, Newport Chemical Works, Passaic, N. J.

The executive committee was elected as follows: H. V. R. Scheel, E. N. Hood, T. T. Clark, E. A. Clements, C. W. Causey, and Dr. Killheffer.

It was announced at the afternoon session of the meeting that a nucleus of the research committee had been appointed; the committee will comprise 24 members when complete. The members named to date are: Albert R. Pierce, W. C. Taylor, W. F. Edwards, Prof. Geo. B. Haven (Massachusetts Institute of Technology), Prof. L. A. Olney, George A. Johnson (research director of the Laundryowners Association, Joliet, Ill.), and Edward W. McGowan (Wyandott Worsted Co., Waterville, Me.)

Background of New President

The Institute has been functioning since July as a preliminary body of 24 directors who were designated for this organization work by an equal number of the industry's associations. All the preliminary officers and directors have been serving with the understanding that their resignations would be accepted at the annual meeting, in order that there might be secured an executive staff as fully representative of every major branch of the industry as possible.

Naturally it was realized that the future of the organization depended to a large degree upon the reputation and ability of its administrative head. The Institute feels that it has secured in Dr. Stratton a man who possesses the qualification necessary for the direction of such a research enterprise.

Since June of this year Dr. Stratton has been chairman of the corporation and executive committee of the Massachusetts Institute of Technology, and for eight years prior to that had been president of M. I. T. He is possibly even better known to the scientific and engineering public through his service as director of the Bureau of Standards at Washington, D. C., which position he held continuously from 1901 to 1923.

Dr. Stratton was born in Litchfield, Ill., July 18, 1861, and took his B. S. degree in mechanical engineering at the University of Illinois in 1884. Following his graduation he remained as a teacher in that university until 1892, at which time he was professor of physics and electrical engineering. In 1892 he transferred to the University of Chicago where he occupied successively the positions of assistant professor, associate professor, and professor of physics, remaining until called to Washington to assume directorship of the Bureau of Standards.

He has been awarded honorary degrees by six universities, has been honored by foreign nations and by

engineering organizations, and is a member of a large number of scientific and engineering societies.

By-laws Approved

The meeting was called to order by P. J. Wood, acting president, and Dr. Killheffer reported for the committee on by-laws. After copies of the tentative by-laws for the Institute had been distributed to the members present, Dr. Killheffer went over them briefly, item by item; the by-laws were adopted with a few changes. In article six, the paragraph specifying that a quorum at any meeting of members shall consist of not less than 28 members was changed to read 20 members. The paragraph immediately following which read, "Each member of the corporation shall be entitled to one vote" was the subject of some discussion. The question was raised as to the status of individuals holding one membership as the representative of a company and another membership as an individual. It was decided that each separate membership, irrespective of whether an individual carries more than one, should entitle the holder to one vote per membership, and the paragraph was changed to read "Each membership of this corporation shall be entitled to one vote." It was also voted that the fiscal year of the corporation begin Oct. 1 and end Sept. 30. A large part of the by-laws covered the usual lines of business structure. Especial interest attaches to the section covering funds and finances. This provides for the following classes of membership and fees: Founder, not less than $10,000; benefactor, not less than $5,000; sustaining, not less than $2,500; life, $1,000 (preceding memberships include life membership); contributing members, $100 annually; annual members, $10.

The board of directors was then chosen, and the board submitted its slate of officers. Dr. Killheffer nominated Dr. Stratton for president in a brief talk in which he emphasized the signal work done by Dr. Stratton as head of the Bureau of Standards, Washington, and in his other distinguished capacities. Dr. Stratton's work in textile research while at the Bureau also was stressed.

Executive Committee Report

The report of the acting executive committee of the Institute was read, and it outlined the organization work done by that body since July. The importance of close cooperation between the Institute and the Textile Foundation, the custodian of research funds, was accented. At a meeting in September, Mr. Wood asked for suggestions as to the character of petition to be presented to the Foundation. On motion of Dr. Killheffer the secretary was instructed to submit to members of the executive and research committees by mail a brief to the Textile Foundation embodying the ideas suggested at the meeting, it being specified that an appropriation of $25,000 be sought from the Foundation for promotional work and financing of the Institute, with the understanding that the Institute obligate itself to raise an equal amount of money.

At the meeting of the research committee held in Boston, the members recommended that Secretary Clark, as soon as funds were available, be instructed to get together a card catalog of all available textile research laboratories in this country and abroad as well as card indices from the *Journal of the Textile Institute*, Manchester, England. The card catalog was to include both participating and non-participating laboratories. It was also stipulated that when funds are available the plans for research activity of the Institute are to be carried out, as covered in paragraph A on page two, of "Operating Plan of the Institute" which refers to "Library Research."

It was suggested that any given large or abstruse research problem be divided into parts and distributed to different laboratories rather than concentrated at any one laboratory. It was also recommended that an effort be made to interest the various Home Economic Laboratories in certain problems for which their equipment would make possible research of a limited but perhaps valuable nature. Prof. Haven and Dr. Emley supplied a list of research problems of general interest to the textile industry.

Mr. Clark, as secretary, then reported on the work done by his department to date, and he told of the extensive foundation work which made possible the first annual meeting. Lack of finances impeded activities for some time, he said, but in mid-October the secretary was able to start a mail and personal campaign for members. Since that time he has mailed more than 1,000 letters and booklets, and has made several trips in the interest of the Institute's membership campaign. These included two days at the convention of the National Association of Cotton Manufacturers at Poland Springs, Me., and a trip through the South. Mr. Clark said he contacted with and secured the support of numerous leading men in the textile industry on behalf of the Institute.

C. H. Clark, elected secretary U. S. Institute for Textile Research

Describes Membership Growth

The secretary described the membership status to date. Of a total of 48 membership applications received up to Nov. 5, of which 17 are contributing and 31 annual members, all but 13 members may be credited to the membership campaign which was started in October.

Mr. Clark added:

"There is also a considerable number of prospective members with whom we are in touch, and who, we believe, are only waiting the results of permanent organization before giving us their membership application.

"With the Institute upon a permanent basis, headed by an able executive and research personnel, and with its policies and plans clearly defined, the membership work already done should bear substantial fruit if adequately followed up with an organized campaign having the active cooperation of every member."

The secretary closed with an expression of thanks to the executive and research committees and the advisory publicity committee for their work and also to George L. Gilmore, president of Textile Research Council, to whom, the speaker said, the Institute owed a debt of gratitude for his services and influence in prevailing upon Dr. Stratton to accept the presidency.

Chamberlain Believes

Knitted Rayon

Is Future Clothing of Human Race

By John Chamberlain, F. T. I.

WITH the introduction of rayon, the knit-goods industry received an impetus which was the means of founding a greatly increased demand for garments of a knitted character. On the other hand, the efforts of knit-goods manufacturers and machine builders did much in the early days to encourage the production and improvement of rayon, and the development of both industries since 1910 is proof of what combined research and enterprise can achieve in textiles.

In the early days only coarse deniers were available. Broken filaments were frequent and the use of rayon was limited to the partial knitting of outerwear and the manufacture of neckwear. Gradually, but not without many disappointments, the knitting properties of rayon were improved, suitable methods of lubrication applied, finishing difficulties overcome, and methods of dyeing the various types introduced. In many cases the successful knitting of rayon preceded the satisfactory weaving of rayon and set a definite value for this fiber.

After the initial difficulties had been overcome it was recognized that the ultimate success of rayon knit goods depended on three things: viz., (1) fine-denier counts in high qualities, (2) the building of fine-gauged knitting machines for rapid production, and (3) efficient dyeing and finishing.

Today 45-denier containing a length of nearly one million yards per pound is in commercial use, and knitting machines possessing up to 36 needles per inch are available for making tubular stockinette, warp-knit fabrics of a ladder-proof character, and full-fashioned hosiery, while suitable dyeing and finishing are assured.

Modern rayon knitting machines may be classified as follows: (1) seamless-hose machines up to 340 needles, 3½ in. in diameter, for "bare-leg" ladies' hose; (2) full-fashioning machines for seamed full-fashioned hose with lace clocks and stepped heel, up to 48 gauge; (3) tubular-web machines up to 34 needles per inch; (4) jacquard flat and circular machines for fancy webs up to 18 needles per inch or 12x12 with rib backing (circular) and 18x18 (flat); (5) warp-knitting machines for ladder-proof fabrics up to 36 needles per inch; (6) Raschel machines up to 28 gauge (Saxon gauge).

In this article, John Chamberlain, well-known English authority on knitting, expresses his confidence in the future of rayon and of knit goods, and describes the recent and likely technical developments upon which he bases his opinion. The majority of readers will differ from him, but all will find his comments interesting.

Seamless-Hosiery Machines

The recent developments in seamless-hosiery machines in regard to fine gauges have been mainly effected for the use of gum silk; but with the introduction of rayon yarns with finer filaments, and more recently hollow filaments, the rayon industry should benefit accordingly. In Great Britain the use of "Celta" on 340-needle machines producing the normal mock-seamed stocking is increasing and ere long will be marketed in larger quantities. Further, a recent patent, under which machines have been actually built and are undergoing mill tests, claims the use of warp threads while retaining the characteristics of filling knitting. The machines built have 300 needles and 300 warp threads, each supplied, suitably tensioned, from a double-ended spool or bobbin. Each warp thread is passed round its needle and knits a continuous chain of loops on the same needle. Experiments have proved that this method insures a degree of non-laddering hitherto unknown in seamless hose without reducing the wale elasticity. The present speed is about 180 r.p.m. Heels and toes are made from suitable yarns in the normal manner.

Another development which up to the present has chiefly been applied to gum-silk hose, but which will undoubtedly be used for rayon, is that of the new "K" model. In this case a gusseted toe is produced on the long-butt groups of needles, thus enabling the toe to be looped underneath the foot to the sole.

A further development for producing fancy hose or half-hose in multi-colors has been made. In this case a full complement of warp threads is used, and by a jacquard needle selection the warp threads are lapped in the hook and plate, or below the latch and knit-in, at the back. All floating threads are thereby avoided, and a hard-weaving double texture is obtained. The patterning scope is practically unlimited, and the foot may be indelibly marked with a registered trade mark.

Reverse plating, another popular method of producing fancy half hose involving the use of rayon, has now been developed by the use of jacquard-drum sinker-selection machines, as illustrated in the "Banner" type, while a German-built machine fitted with a ribbon attachment also gives wide designing scope. Float-plating, as exemplified in the "spiral-float" machines, is another highly successful method of designing suitable for rayon

plating. A recent patent involving the positioning of three yarns in "reverse" plating is likely to lend further encouragement to the use of rayon, as other yarns are difficult to position with certainty except with rayon.

Full-Fashioned Hosiery Machines

The large increase in the number of full-fashioning machines in use will eventually result in the production of more rayon and rayon-mixture hose, as the purchasing power of the public is inadequate to absorb a 100% gum-silk output under normal conditions. Innovations such as are exemplified by the use of a minimum number of narrowing points or the reversing of the face of the fabric are significant, and a rayon full-fashioned hose campaign may be needed in the near future to keep the expensive full-fashioning machines fully employed.

Flat- and Tubular-Web Machines

The highly productive tubular-web machines possess one drawback for the use of rayon, in that the fabric is easily laddered. Nevertheless the fabric is highly prized for ladies' lingerie, and various measures have been taken to lessen this failing. A 1x1 float stitch at alternate feeders is being used as a partial preventive; and as fine deniers become available in warp and filling, as in hose, these and even ordinary 1x1 reverse plating will undoubtedly assist. Fine-ribbed rayon fabrics are now producible on machines with up to 18x18 needles per inch, but up to the present the "interlock" type of rib machine —the basic patents of which are now lapsed in Great Britain—has not been used to any extent. Circular warp-knitting machines as yet have not met with the success expected and rotary control of the knitting elements is still an unsolved problem.

The production of jacquard fabrics in rayon is increasing, and the modern developments culminating in the production of machines which produce garment lengths with welt and 2x2 rib bottom are likely to popularize the wearing of fancy knit outerwear, and incidentally increase the use of rayon. On the continent of Europe sales of jacquard knit wear are proportionally much greater than in Great Britain or the United States, and much of this is due to the flair for design and the presence of competent designers.

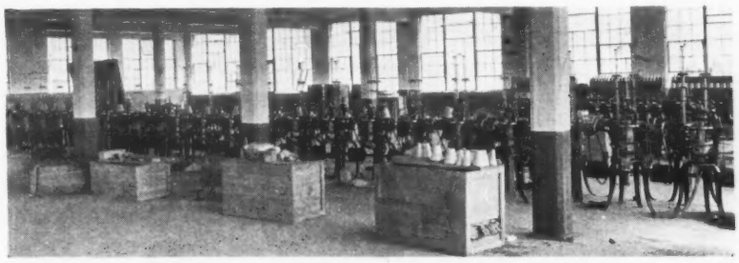
Warp-Knitting Machines

The increase in the number of warp-knitting machines since the coming of the "rayon age" has been phenomenal, but the opinion is held in some quarters that the saturation point has been reached. However suitable and popular a textile fabric may be, there is always an eternal longing for something new. With the great possibilities in the variation of warp stitches, it should not be beyond the ability of the knit-goods manufacturer to vary the texture while retaining its ladder-proof virtues.

"Knock-off" stitches, which at present are chiefly used for fancy effects, would, in simple lamps, give satisfactory textures, both close and open. Machine builders could re-design the machines to make these stitches at suitable speed. It is satisfactory to note that further improvements are being incorporated in the atlas type of machines. Circular milanese machines have not as yet fulfilled the promise suggested by their introduction, but sooner or later a really satisfactory spring-needle circular loom will be evolved.

The interesting raschel machines, which compete with the jacquard circular knitting machines, have the great advantage of being capable of introducing a maximum number of colors longitudinally. The recent development of the jacquard raschel permits of the production of very elaborate effects and should stimulate the fancy knit rayon-wool trade.

The chief difficulty experienced by the rayon manufacturer today—and incidentally others—is that of increasing the demand for his products. To him, the subsequent use in knitting or weaving as each trade in turn gains the ascendency, is of little consequence. Hence



Circular-hosiery mills are large users of rayon

statistics giving the amounts of rayon used in knit goods only, which are far from reliable, do not give him the satisfaction of those dealing with rayon as a percentage of the world's textile materials. Obviously such factors as the standardization of feminine attire in the East on a Western principle might increase the knit-rayon business without adding to the output of rayon. On the other hand, if the irrational prejudice of the ultra-conservative masculine sex towards the wearing of rayon half-hose, vests, pants, union suits, night attire, and outerwear could be overcome, the percentage of rayon used would be considerably increased, even without emphasizing the advantages in comfort and hygiene.

In the knit-goods trade there is still room for more rayon, and the present financial stringency may result in more rayon being used as a substitute for silk—a recurrence of its original purpose. The uses of fancy knit rayon materials for millinery, gowns, brassieres, pajamas, and other feminine garments can still be extended, but until there is a universal demand for knit rayon in connection with some article of general use—e.g., knit rayon curtains—the increase in the demand is not likely to exceed the supply.

Up to the present little has been done to educate the purchaser in regard to knit rayon. The terms "woven" and "weave" are often used indiscriminately in the selling of knit rayon goods. Surely the peculiar prepossessing properties of the twin textile prodigies of the twentieth century are of such a unique character as to warrant collective publicity. A comparison of 1900 with 1930 in production, machinery, and fashion would disclose the remarkable development of the "knit rayon age."

If a tableau could be arranged showing the development of dress through the ages, would not the scene commence with the display of our ape-like ancestors with their natural hairy protection and the prevailing fashions in the Garden of Eden, and continue through the exhibiting of primitive man with his covering of skins or his use of woad, show the early garments of Sumerian origin, the graceful Grecian modes, the farthingales and crinolines, the atrocities of the Victorian era—reveal the uses of linen, cotton, wool, silk—and finally reveal modern femininity clothed entirely in knit rayon, the last word in textiles, the future clothing of the human race.

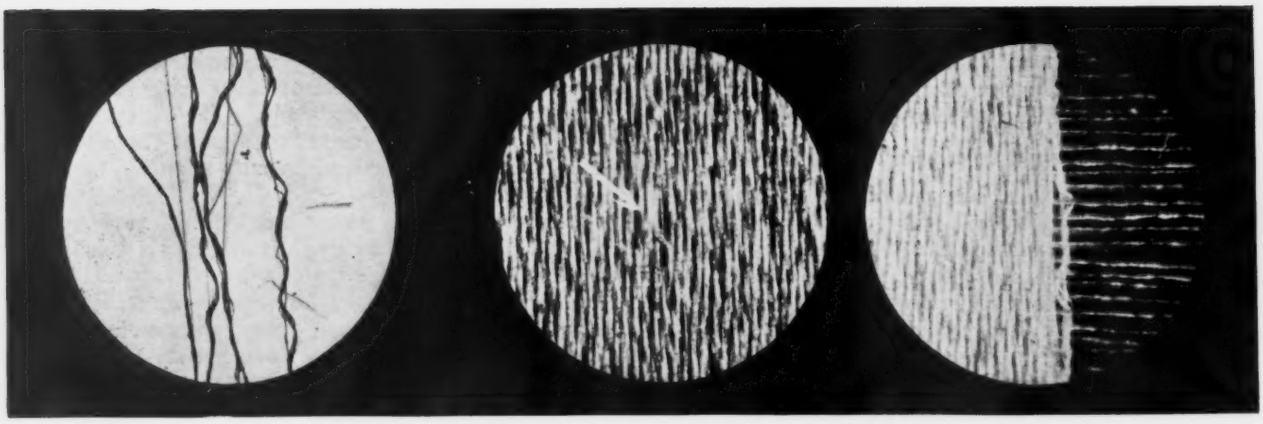


FIG. 1

Fig. 1—Corkscrews in raw silk. These are classified as minor defects, and are found in almost any grade of raw silk. Unless a lot so affected is being used as the warp of a satin weave it is of no great importance.

FIG. 2

Fig. 2—Corkscrews will not lie in an even plane with the regular threads in the finished piece. For this reason they reflect the light differently from the surrounding ends and are a decided drawback in raw silk intended for building a satin face, defeating the desirable smoothness.

Photomicrographs!—

By E. L. Hodge

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TO those who give intelligent attention to the textile industry in this country, it is apparent that considerable forward progress has been made in the last ten years. This is true in many ways. Particularly is it true in regard to the endeavor that is being made to reduce textile manufacturing to an exact science, and to profit sufficiently by the mistakes that have been and are being made to prevent their recurrence. While this desire has no doubt existed in the past, it has made itself evident in a somewhat hit-or-miss way, and has not assumed the importance that it has attained today.

The whole question of claims because of

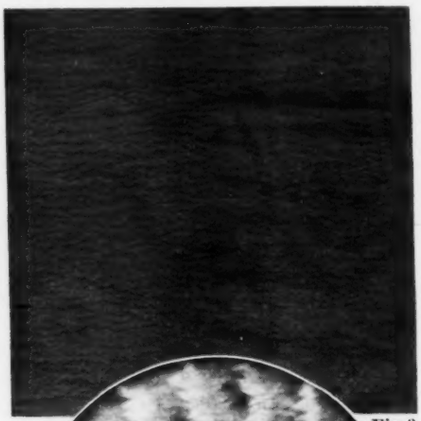


Fig.3

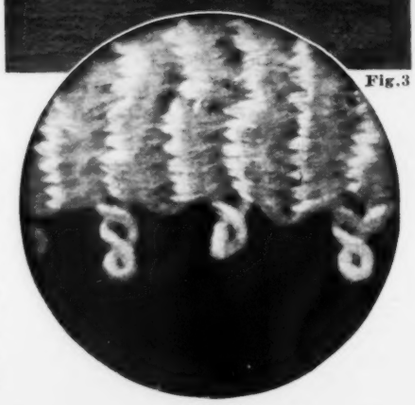


FIG. 4

Fig. 3—Apparently a case of slack twist in a boiled-off Canton crepe, yet a twist test disclosed no appreciable difference in turns per inch of the filling in either section. Microscopic examination of the ragged edge of the top section, however, showed a startling difference in the tension of the right and left filling threads. While one has the proper tension, the other lies so loosely that on outside of the edge it forms a loop. Fig. 4—Looped threads which caused defect shown in Fig. 3.

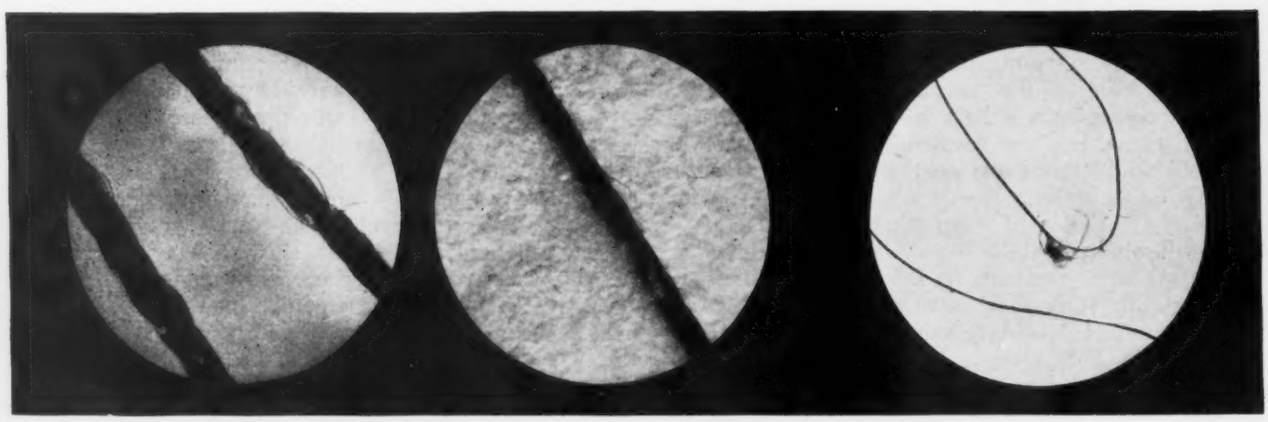


FIG. 5

Fig. 5—Silk sewing thread dyed black. The white specks adhering to the surface of the thread are microscopically small parts of fibrillae. Severe treatment in the boil-off and dyeing of the silk is usually responsible for this condition, which is called lousiness.

FIG. 6

Fig. 6—Single cocoon ends have a tendency to split into a mass of minute fibrillae. The least strain breaks them, and they usually collect in little bunches wherever they find a hold, generally on loops and nibs of the thread. On account of their extreme fineness, fibrillae are unable to absorb the dye in the same proportion as the regular threads. This causes them to appear almost white, giving the finished product the appearance of being covered with tiny snowflakes.

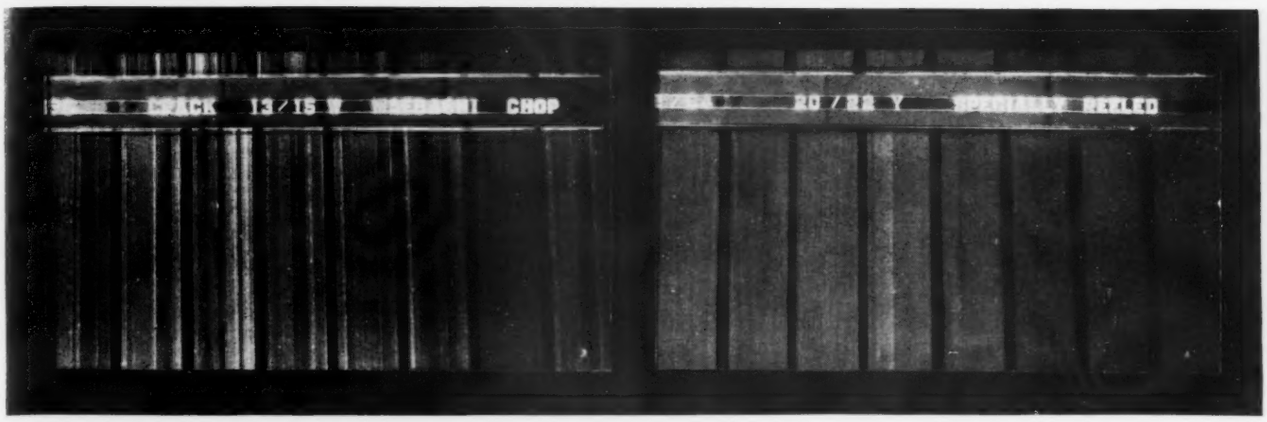


FIG. 7

Fig. 7—Lot of raw silk bought as a Crack XX. The picture showing the results of the seriplane test proves at a glance that this silk was really several grades below the standard of a Crack.

FIG. 8

Fig. 8—Seriplane test of a 90% silk, which was fully up to grade.

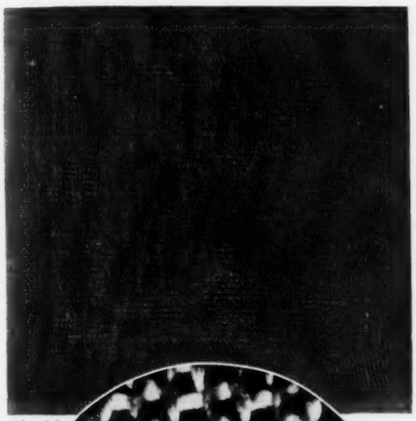


Fig.12

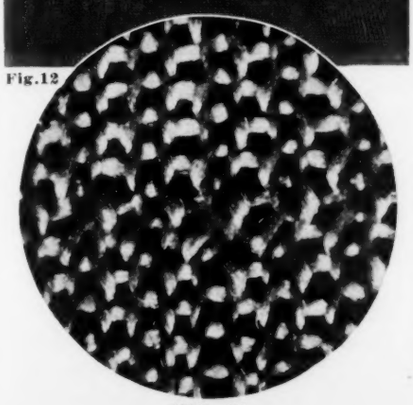


FIG. 13

Fig. 12—Defect known in the knitting industry as slackening or sleaziness. Fig. 13—Highly magnified view of a sleazy fabric. Note the distortion of the loops, indicating that the defect results from an irregular bending of the silk thread around the needle. Often this defect can be traced to gummy spots in the raw silk, which have not been properly softened in soaking, or which result from improper moistening of the silk on the knitting machine.

What Good Are They?

alleged defective goods and goods returned for other reasons has forced itself upon the attention of practically every factor in the industry. This point has frequently involved a considerable amount of time spent in the courts, and the loss of thousands of dollars. Court cases have required the testimony of experts with sufficient technical knowledge and practical experience to discover and point out the source of the trouble.

In the textile industry, as in nearly every other, passing the buck has been and still is, to some extent, a favorite subterfuge. But there is a direct cause for every defect in both raw material and finished goods. When this cause has been located, it is hardly possible to shift the blame elsewhere. This direct placing of the fault has two distinct advantages. It puts the responsibility squarely

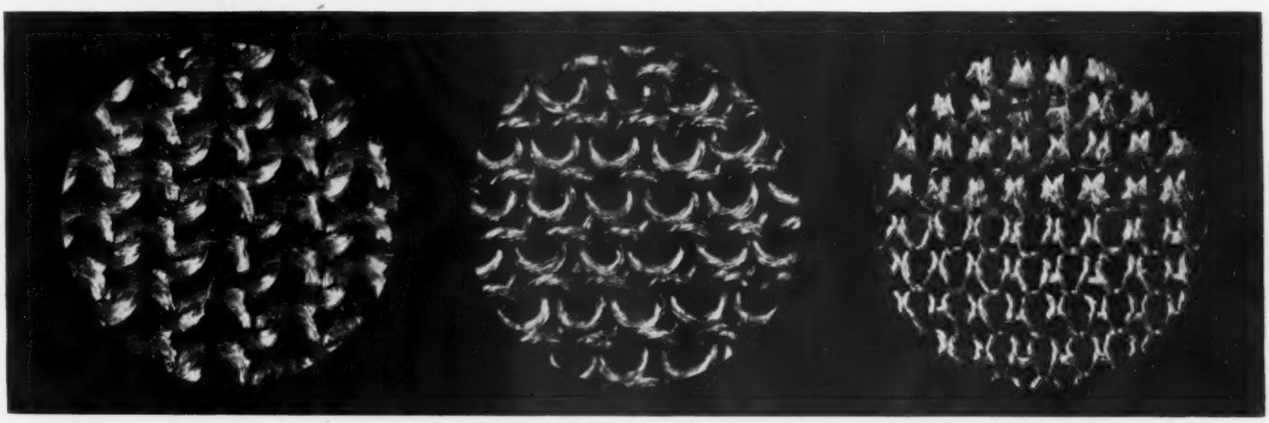


FIG. 9

Fig. 9—Silk stocking made of tram, magnified 75 diameters in original photomicrograph. The white points on the surface of the silk indicate lousiness, a condition which creates a disturbance on the face of the silk and prevents a uniform dyeing.

FIG. 10

Fig. 10—Stocking knit of a grenadine twist. The photograph shows the compactness of the twisted threads and also the extreme looseness of the knit, which allows a maximum stretch of the stocking.

FIG. 11

Fig. 11—Difference in appearance between a stocking knit with a grenadine twist and one of ordinary tram. The top section is made of tram, which results in density of knit and heavy light reflection; the bottom section illustrates the sheerness of a grenadine stocking and minimum light reflection.

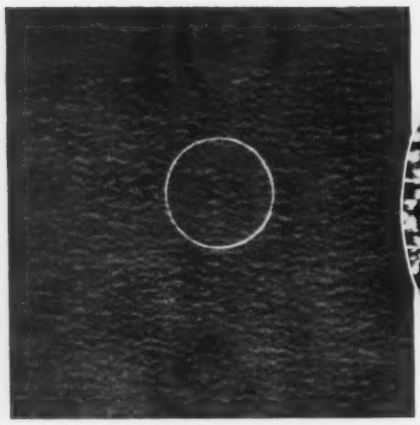


FIG. 14

Fig. 14—Barre marks in a crepe de Chine, the origin of which was disputed, and claim made against the dyer.

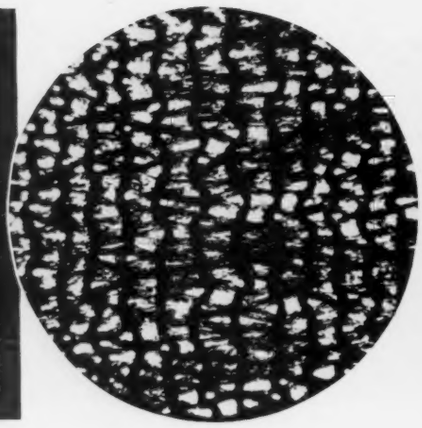


FIG. 15

Fig. 15 (center)—Microscopic enlargement of the circled portion of the fabric shown in Fig. 14. The photograph indicates the defect is caused by mechanical means. It is apparent that the spacing of the picks in the center of the picture is much wider than toward the two sides. Improper adjustment of the let-off mechanism on the loom was evidently to blame for the defect.

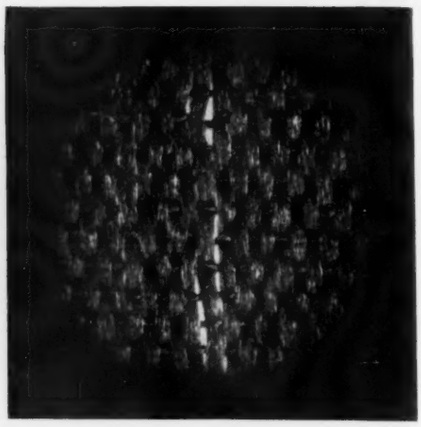


FIG. 16

Fig. 16 (right)—A crepe was examined for the cause of open face and streaks. The photomicrograph indicates tight ends which prevent the adjoining threads of one side from spreading and filling out, while the adjoining thread of the other side appears extremely loose and shifts around, causing a streaky appearance, and at the same time giving the fabric an open-face effect.

where it belongs, and it aids in preventing a recurrence of the same trouble.

Textile analysis has come, therefore, to hold a recognized position in the industry. The various laboratories doing such work are, however, faced with a further problem than that of determining the cause of the trouble. They must not only find it through their own technical knowledge and experience, but they must be able to explain it conclusively to all parties concerned. This often is not as simple as it may seem. The finished fabric passes through many hands before it finally reaches the ultimate consumer. Each factor understands his own manufacturing processes more or less thoroughly, but may know little of those preceding or succeeding. Therefore a complicated explanation of the exact nature of the trouble may mean little or nothing to him. He must be told in language that he is able to understand.

Take, for example, the case of a finished garment that is returned to the retailer for good and sufficient reason. The retailer naturally returns the garment to the cutter-up from whom he bought it. The cutter-up declares the fault is not his, and passes the blame to the manufacturer of the goods. He in turn may very likely insist that it is all the fault of the dyer, who will probably also produce an alibi. To convince all these various factors, there must be an explanation of the trouble that will not only tell, but show where the trouble lies.

Pictures of defects in finished or partly finished piece goods are an invaluable help in tracing the trouble to its source; and here the photomicrograph is proving its worth and is coming into more general use all the time. After the expert has traced the final cause of the defect, he has his photomicrograph made, showing the defect so greatly enlarged that it illustrates his explanation in an unmistakable manner. Indeed, in some instances no explanation beyond the picture itself is necessary.

Examination of Raw Materials

Another use of the photomicrograph is in the examination of raw materials. For instance, the quality of a lot of raw silk depends chiefly upon its evenness and cleanness. Determining the grade, therefore, resolves itself into a question of comparing these characteristics with established standards. The seriplane offers a convenient and efficient means to accomplish this. Raw silk is wound on blackboards of ten panels each, according to the size; i.e., 100 threads to the inch for 13/15 denier or 80 for 20/22 denier. These boards are then inspected in a specially constructed dark room under artificial light. The evenness of a certain lot (*Continued on page 71*)

FIG. 17

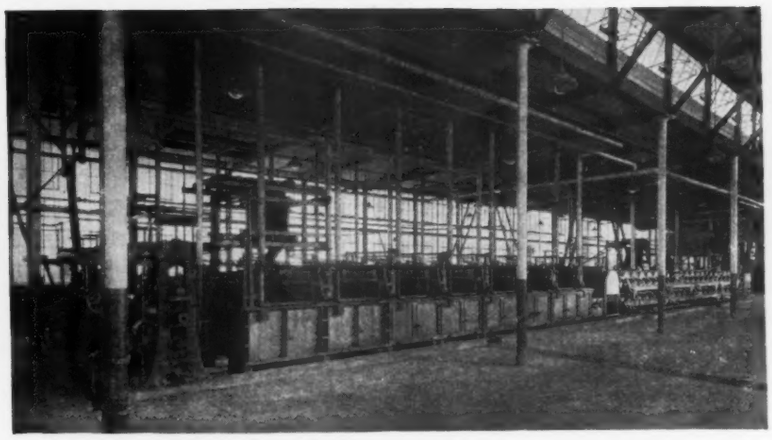
Fig. 17—Organzine which normally appears very fuzzy. The illustration shows the cause of this fuzziness to be due partly to fibrillae and partly to filaments looping up and twisting around the thread.

FIG. 18

Fig. 18—Effect of water on untreated camel's hair. The water is absorbed into the fibers and causes them to swell.

FIG. 19

Fig. 19—Cravenette-processed camel's hair. The fibers of waterproofed camel's hair are thoroughly water-repellent, the moisture collecting on the surface in the form of tiny drops.



Cotton-rayon piece goods are often processed on a range of this type

Improved Methods of Processing *Enhance Appearance of* Cotton-Rayon Fabrics

By Ray Cottrell

DURING the last year considerable progress has been made in processing fabrics composed wholly or partially of rayon. There have been, it is true, no outstanding discoveries relating to the underlying principles involved in bleaching, dyeing, and finishing. On the other hand, there has been a marked refinement of methods which has resulted in undoubted improvements in the appearance and handle of finished fabrics.

Dyeing, in all probability, has received the most attention; but with the exception of a gradual evolution of a range of direct colors which have the property of giving even shades on rayon of varying affinity, and a modification of existing methods of applying the ordinary direct colors, nothing of an unusual nature has been accomplished. Ordinary direct colors are still being applied to cotton due to the fact that the even-dyeing colors are unfortunately not of the best fastest, particularly to washing. And, with an ever-increasing tendency of the public to demand fabrics which must be washable, the dyer is compelled to use either uneven-dyeing colors or suitable combinations of both types. In addition, there are one or two primary colors still missing from the list of the even-dyeing direct colors.

Economical and Efficient Bleaching

The method of bleaching of fabrics containing rayon (with the exception of acetate yarn) has developed largely into a slight modification of general cotton practice; a modification induced, more often than not, because of the more delicate construction of goods containing rayon, than because of any inherent weakness of rayon when exposed to the common scouring and bleaching agents of usual concentrations and at ordinary temperatures and pressures. Widespread association of rayon with cotton warps to form the popular plain fabrics, such as the alpacas, involving comparatively big yardage at a finishing cost very little, if any, above that for corresponding fabrics wholly of cotton, has also been responsible for bleachers adopting methods which must be, at once, economical and sufficiently efficient to effect perfect scouring of the cotton warp, often of unmercerized, carded stock.

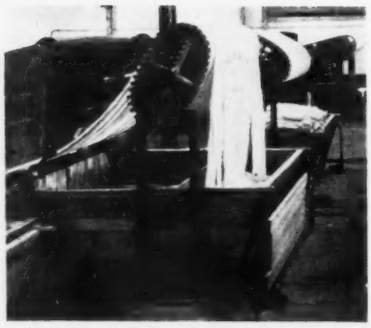
A recent innovation in the manufacture of viscose rayon which may have far-reaching effects on the processing of rayon fabrics is the introduction of Lilienfeld rayon. This variety, obtained by spinning the viscose solution into sulfuric acid of at least 55% concentration, is said to have enabled Lilienfeld to stretch the filaments and thus obtain a parallelism of the miscellae and a tremendous gain in the tensile strength at a remarkably small increase in operating cost.

This process, it is asserted, yields a rayon with a dry strength in the neighborhood of 7 grams per denier and a corresponding wet strength of about 4 grams per denier. Ordinary rayon has a dry strength of 1.5 to 2 grams per denier, so that Lilienfeld rayon has a wet strength at least twice as great as that of ordinary dry rayon. Coupled with the fact that it is claimed for this rayon that subsequent treatment with swelling agents fails to disturb the arrangement of the miscellae, the tremendous strength of this variety should enable bleachers to approach more and more to current cotton practice, and consequently to a more efficient and economical finishing basis.

Varied Finishing Processes

The ways and means of finishing fabrics containing rayon are legion, partly because of the still unknown

qualities of a comparatively new fiber, the introduction of such an arbitrary factor as luster, the limitations placed on the finisher by the grade and consequently the strength of the rayon, and the unavoidable finishing of rayon materials on cotton machinery. Customers' individual tastes, with regard to fabrics of identical construction, vary considerably on the question of luster, pebble, softness, width, etc., particularly with all-rayon crepes and crepe fabrics generally.



Rayon crepes are often dyed in oval-reel machines

The type of equipment best suited to the scouring and/or bleaching and dyeing of fabrics consisting wholly or partially of rayon is governed by the nature of the material, the yardage to be processed, the type of rayon incorporated in the cloth, and the yardage per shade. For instance, certain fabrics, such as rayon warp satins, taffetas, foulards, failles, and twills, containing either regenerated or acetate cellulose, must be processed in the open width; processing of such goods in the rope form, particularly those containing acetate yarn, which becomes plastic when treated with hot scouring solutions, results in the formation of creases which are often extremely difficult if not impossible to remove.

Fabrics, such as alpacas, have given rise to a great deal of trouble in the past, owing to the goods having a poor finished appearance which can generally be traced to the fact that the cotton is dyed lighter than the rayon. A fiber or fabric under tension does not absorb as much color as one that is slack (all other conditions being identical), and as rayon already has a greater affinity for direct colors—particularly in navy-blue and dark-brown shades—this difference will be accentuated.

A point not often appreciated, but nevertheless of considerable importance when processing materials with a crepe warp, is the fact that in scouring or dyeing on the jig, the operation takes place almost entirely when on the batch; and consequently, with the vast majority of jigs which exert considerable tension on the warp, the crepe effect is seriously retarded and the amount of dyestuff absorbed by the cotton is further diminished. The jig method as a whole is subject to obvious limitations, but still finds many adherents, and is used as stated above. To overcome the tension exerted on the warp and the tendency to cause bowing or distortion of the filling in certain light fabrics, the jig illustrated has recently been introduced. Essentially it has only one draw roller which drives the running-on and running-off batch rollers, thereby insuring that the cloth speed is kept constant throughout the operation. Creasing is minimized and further prevented by the single immersion roller carried in self-aligning bearings, any draw on the cloth immediately adjusting itself parallel to the draw roller. Automatic braking is provided by arranging the running-off batch roller so that it revolves against two inclined planes.

Preliminary Examination Important

A preliminary examination of the nature of the size used in the preparation of the rayon yarns will frequently save time and the risk of unsatisfactory finished goods. Unfortunately there is no standard recipe for sizing rayons; consequently, one may find in cotton-rayon mixtures either singly or in combination widely divergent materials, such as soap, gelatin, olive oil, neats-foot oil, mineral oil, dextrin, Irish moss, starch, gum tragasol, etc.

Many cotton-yarn fabrics are gas singed either dry or quenched through a solution of disastafor, rapidase, or some other diastatic compound, according to whether the goods are to be scoured on the jig or by one of the methods to be described later. Singeing of these fabrics has raised a good deal of controversy, some finishers stating that singeing gives the goods an undesirable luster, while others assert that the smoother appearance of the cloth warrants the extra expense. Omission of the singeing process must be rectified by a slight calendering, but this remedy is only a temporary measure, and will be disclosed after the first laundering.

Scouring Large Quantities

Scouring of large quantities of fabrics, such as alpacas, warp-striped poplins, warp-striped shirtings, warp-striped corset cloths, and certain rayon-warp linings, may be conveniently and satisfactorily carried out by one of the following methods: (1) Continuous scour through a battery of winches or rope soapers; (2) scouring in the kier; or (3) peroxide bleach. The question of which of these methods are best suited to any one fabric should be determined by a consideration of the general cleanliness of the goods, whether the cotton contains many motes or neps, whether the rayon contains unsaponifiable mineral oil, and whether heavy or light shades or whites are called for.

The battery in the continuous run is fitted with the necessary squeeze rolls and slack boxes. The first and second units of the battery of four rope soapers contain boiling scouring liquor, both being fed continuously with a fresh supply of liquor from a stock tank, while the third and fourth vessels contain hot and cold water respectively. Calculated on the weight of the goods, the scouring liquor may consist of 2% of soap (tallow base 63%), 1.5% of soda ash or trisodium phosphate, and the required amount of a suitable emulsified solvent. This method is particularly suitable for processing lots too small to fill a kier or for that modern bugbear, the rush order.

Scouring in the Kier

Another method, which for large orders is generally more efficient than that described above, consists of scouring the goods in the kier. After quenching through malt, and piling for the requisite period, the goods are washed and piled into the kier. The scour may be conducted at the boil at atmospheric pressure with caustic soda of not more than 1½° Tw., together with soap and an emulsified solvent, or by using a formula similar to the one employed in the continuous run. The goods should be scoured for 5 to 6 hours, washed in the kier with hot and cold water, scoured through a machine, and again washed. This treatment will generally leave the goods sufficiently clear and white to enable all but the lightest and brightest of tints and whites to be obtained without recourse to chemicking.

The peroxide bleach is finding satisfactory application in the processing of goods required in the lightest and brightest of tints; for full whites; and in addition, for those goods, unfortunately increasingly common even in fabrics containing rayon, which have motey cotton warps. It has been found beneficial to give the goods undergoing

a peroxide bleach, a preliminary scour, such as that mentioned in the continuous run, followed by a peroxide treatment in a cement-lined kier. This initial treatment is unnecessary for whites, and is only recommended in the case of goods which are to be dyed on the padder.

The peroxide bleach should be conducted for 5 to 6 hours at 180° F. with 2% of hydrogen peroxide (100 volume), 2½% of sodium silicate, and 3% of magnesium sulphate (calculated on the weight of the hydrogen peroxide).

After scouring, the goods are scutched, mangled, and dried. In drying cotton-rayon fabrics care must be taken not to "bake" the goods. It is not intended to elaborate on the methods used to insure even and solid shades on plain rayon-cotton mixtures, as this phase has been discussed extensively in the last two years.

As mentioned previously, jig-dyeing of such goods as have been described is always a difficult operation to perform satisfactorily; and with the introduction of the new type of jig, which exerts practically no tension on the warps, in many cases the winch offers no advantage.

Padder Overcomes Many Troubles

The American padder overcomes many mechanical troubles, but although this type of machine offers definite advantages of production and uniformity of shade, care must be taken to avoid undue tension and consequent fraying, uneven setting of the rollers, scum and seam marks, and "two-sided" dyeing. Otherwise the main advantage of the padder will become its greatest drawback. While the use of elevated temperatures is beneficial in the production of uniform shades on rayon of varying affinity on the jig, such temperatures do not have the same effect on the padder. On the padder high temperatures often are not advisable on account of the tendency to form pale selvages, due to the outside of the batch cooling down quicker than the inside. In addition, in order to avoid any tendency toward "two-sided" results, the dyed batch should be allowed to lie for at least ¾ hour before drying, thus allowing as complete penetration as is possible by simple padder methods.

With heavy cloths, such as rayon warp satins (scoured on the jig), there is a danger, when dyeing medium shades, of forming seam marks. This tendency may be avoided partially by a choice of colors with high affinity and by passing the goods through a saturated solution of glauber salt on the jig or through the second box of a double padder containing glauber salt in solution.

Mercerizing Fabrics

On account of the poor appearance of some of the plain rayon-cotton fabrics, particularly those alpacas with carded cotton warps, considerable research has been carried out on the mercerizing of these goods. Mercerization is employed principally to create in the cotton an increasing affinity for direct colors, thereby preventing the aforementioned tendency of the cotton to mar the finished appearance of the cloth.

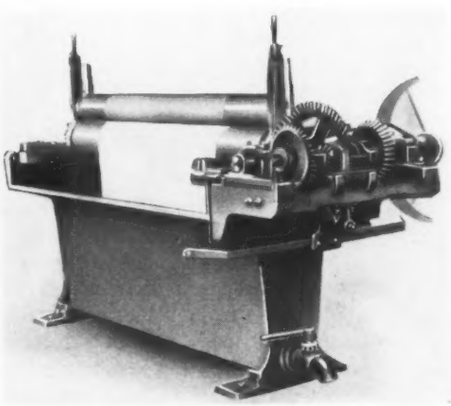
Further advantages occuring from mercerization are that the cotton is rendered more lustrous, transparent, and smoother; rayon of varying affinity for direct colors undoubtedly absorbs such colors more evenly; and the cost of mercerizing is often balanced by the saving of dyestuffs in heavy shades.

Caustic soda of the usual mercerizing strength has little appreciable effect on the regenerated-cellulose rayons; but when the caustic is washed off with cold water, the rayon fiber swells tremendously, becomes more or less delustered, and partially dissolves; on drying, it becomes harsh and brittle.

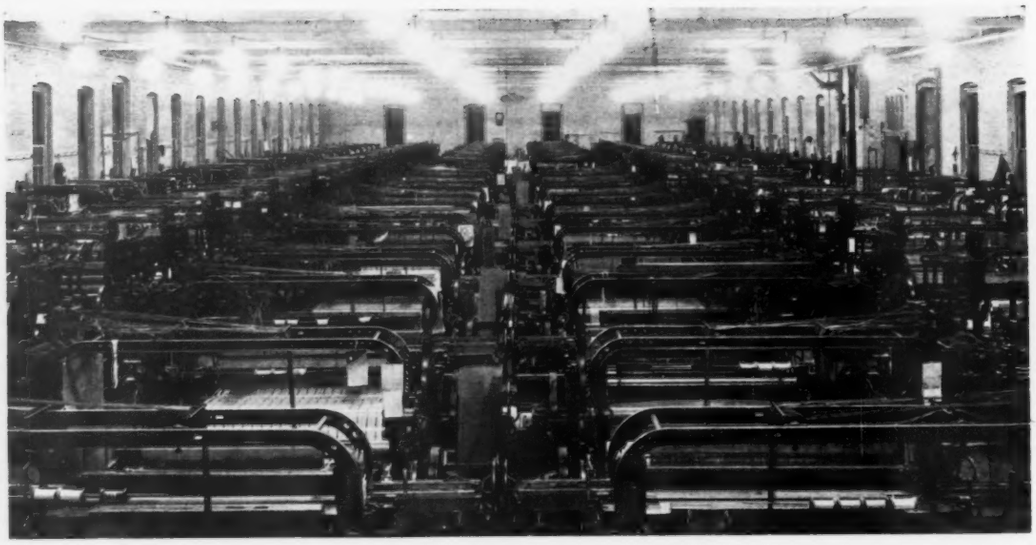
It has been found nevertheless that regenerated-cellulose rayon is soluble in caustic soda, and that this solubility increases from a minimum at dilute concentrations to a maximum at around 20° Tw., with a rapid decrease in solubility as the concentration increases above this. In addition, cold solutions of caustic soda have a more harmful effect on regenerated-cellulose rayons than have hot solutions of the same concentration.

Some of the more important methods which have been suggested for modifying this deleterious action are as follows: (1) U. S. patents cover the inclusion of such substances as phenol and glycerin in the mercerizing liquor. The objection to this method, while efficacious, is the high cost of material and the difficulties in recovering the caustic. (2) Use of caustic potash instead of caustic soda, as the former has considerably less swelling effect on regenerated-cellulose rayons. The cost of such a procedure, unless the caustic potash were recovered and used over again, would be prohibitive; and where cotton goods were also being mercerized would lead to obvious complications. (3) Use of hot water in subsequent washing of the material free from caustic soda. The use of hot water for washing after mercerizing is infinitely better than that of cold water, but does not entirely eliminate the swelling of rayon, with corresponding loss of softness, strength, and luster. (4) Satisfactory results have been obtained by washing off after mercerizing with a hot 10% brine solution (E. P. 323,307 and 323,345). (5) The mercerizing of acetate cotton mixtures is accomplished by using mercerizing liquors of the usual strength; but in washing off, a cold 10% brine solution must be used.

(To be continued)



Tensionless jig developed for processing fabrics containing rayon



Ideal loom fixing is evidenced by neatness throughout

A Well-Harnessed Loom Section

Signifies a Conscientious Fixer

By H. E. Wenrich

Although this article is written by a silk man, his comments are largely applicable to loomfixers in all weave rooms. No matter what type of fabric is being made, the fixer's ability and the interest which he takes in his work are indicated by the same tokens.

THE first essential for obtaining quality and quantity in a silk-weaving section is a fixer who takes pride in his work. And one of the most important parts of the fixer's work is taking proper care of the harness.

Whether or not a fixer is conscientious can be determined simply by taking an investigating walk through his section. Ideal workmanship is evidenced by neatness throughout. A good fixer gives individual attention to every part of the loom which shows signs of wear. When a part shows great usage, he replaces it before it does untold damage. When a part is broken, he replaces it at once. Such is real fixing.

Poor and Good Fixers

There exist at times certain conditions in the work of fixers which will not show on the surface. Mills that are on two- and three-shift operations are handicapped to a certain extent in detecting the merits of men who take real pride in their work.

Some fixers who are showered with work right after starting time are really doing the work of the fixer on the former shift. It will require at times several jobs for the fixer to catch up in his work to a point where he can show results. The consequence will be that his possibly admirable work will often be overlooked. Sections will also become run down when fixers impose on others, as real fixers soon hold a grudge against the poor fixers who leave the looms in poor working order. These men will then in turn pass on work to the next fixer.

If fixers are scarce, placing the best fixers on the same section will at least establish harmony; but unfortunately, placing poor fixers on one section will spell disaster for

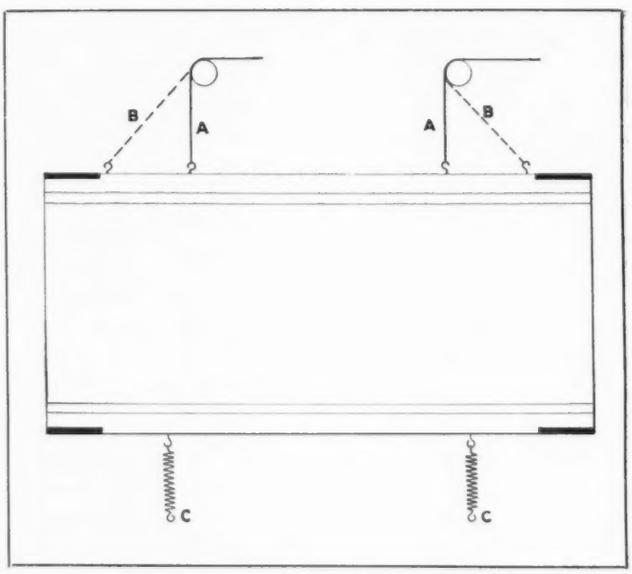


Fig. 1. Proper and improper harnessing

the quality and quantity of the material. This is a difficult problem, and one which the man in charge must work out for himself. Judgment will be required to bring it to a satisfactory conclusion. The best man should be well compensated for keeping a section in first-class order and in doing fixing that the less-experienced man or the man who is merely "getting by" leaves for him to do. I have known fixers to leave jobs for the incoming fixers that have been called to their attention half an hour and more before quitting time. Such fixers have no pride in their sections.

Responsibility for Harness

Of vital importance in the maintaining of quality is the condition of the harness. It is up to the fixers to keep the harness which comes to their sections in shape. They cannot rely upon the twisting department to make this its business.

A properly hung set of harness shows that the fixer is on the job. A poorly hung set shows that he is the type of fixer who merely tries to "get by," and who cares little for his employer's business as long as he gets his three meals a day.

Let us look at Fig. 1. Harness hung in this manner on all the looms in a section shows that the fixer is wide awake and realizes the importance of having a job well done. The sketch as at *A* illustrates the jack cords and cable strings supporting the shafts in a properly balanced manner, while the dotted lines at *B* show the way some shafts are improperly hung.

On the bottom of the shaft the springs *C* are set in slightly from the top hookings *A*, as can be seen. If too much spring is placed on the bottom, the tension will spring and warp the shaft to such an extent that the set of harness will soon be ruined. A warped set of harness also is the means of breaking out the heddles at the ends and causing many small end smashes, due to pieces of the heddles falling into the warp while the loom is in operation.

Mills that have several types of loom in one section require considerable work of the fixer in harnessing. Harness from a 52-in. loom, for example, may next be placed into a 56-in. loom; and in such cases it will be found that the screw hooks in the shafts must be taken out and replaced for balancing properly as in Fig. 1. Two sets of hooks will be of help to the fixer if this is of constant occurrence, as the hooks need not then be taken out and replaced every time a warp is placed in the loom. The extra hooks in this case will be a source of annoyance to the weaver when he is drawing in the ends, as in reaching over the harness his sleeve will be likely to catch.

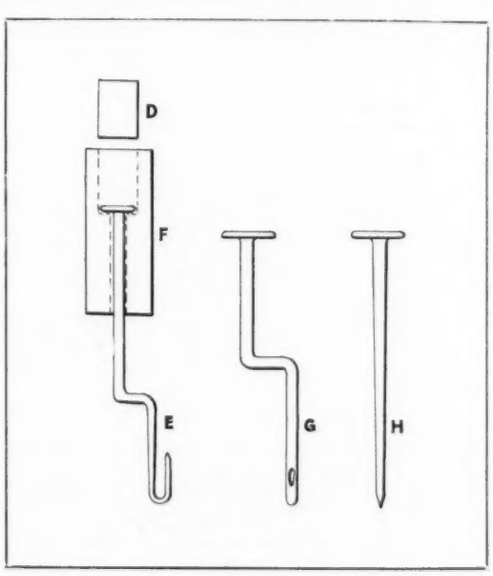


Fig. 2. Improvised screw-eye wrenches

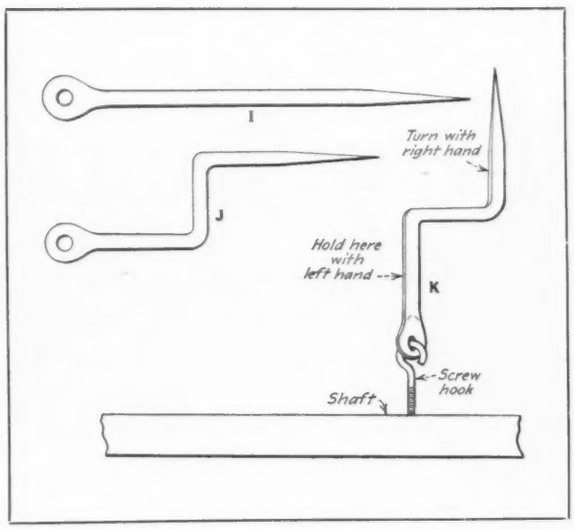


Fig. 3. Wrench preferred by the author

Screw Eye Wrenches

When fixers have spare time on their hands, they might find it of advantage to make the small tools shown in Figs. 2 and 3. The screw-eye wrench in Fig. 2 is well known to many fixers, with the exception that in this case the steel comes entirely out of the handle. It is used for screwing the hooks into the harness. The steel used in this wrench is placed into the handle *F* before the shaping at *E* is undertaken. After it is placed in, a plug *D* is glued in the end of the handle. After the glue has dried, the handle is finished up on the emery wheel. If the fixer prefers, he can make this tool with the type of eye shown at *G*. An awl for punching the holes in the shafts for the screw hooks can be made as shown at *H*. This tool allows one to grip the handle firmly and so prevent its turning in the hand.

Another tool which a friend of mine once made is shown in Fig. 3. I have improved this tool by adding the point on it to punch the holes for the screw hooks; but, if it is worthy of a name, it should properly be called the Currney tool in honor of the originator. It is very good, and I prefer it to the tools shown in Fig. 2. It consists of a piece of steel shaped as shown at *I* and about the size of an eight-penny nail with the one end flattened and a hole bored in it. The dimensions of the tool which I use are given at *J*. At *K* is shown the manner in which the tool is employed.

Keeping Harness in Good Condition

Harness that is going to be stored away for any considerable period can profitably be sprayed with light oil at the back while it is in operation and there is but a yard or two of warp to be finished. This will allow plenty of time for the oil to cover the heddles and prevent their rusting.

Hard work when needed and head work at all times will keep any fixer at the top of his class.

OVERSEERS' ROUND-TABLE

THIS department offers a new subject for discussion each week and gives readers' comments on problems introduced during previous weeks. The subject which was opened four weeks ago is closed this week and a summary of contributed ideas is given on opposite page

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Discuss Stock Participation Plans for Employees

Editor, Overseers' Round-Table:

GIVING WORKERS the option to purchase stock is worthy of wider adoption. When a worker becomes a shareholder he shows a renewed spirit of activity and interest in his work which has a direct bearing on the finished product.

The risk of industrial troubles is greatly reduced. A uniformity of ideals is erected toward the common goal of successful operation, with its accompanying financial gain.

ROBERT A. C. SCOTT.

Editor, Overseers' Round-Table:

I THINK it is a very good idea to allow employees to buy stock in their company on the installment plan. It is an opportunity to get more of the workers vitally interested in the financial success of the enterprise.

There are, in every plant, employees working as day laborers who are intelligent. If they are stockholders they know to a certain extent how much money the company is making and the different problems there are to overcome. The influence of such an employee on other employees is valuable to the company, especially at this time when it is difficult to pay dividends on the common stock and labor unions are giving all possible trouble. JAMES L. TURNER.

Editor, Overseers' Round-Table:

THE SUCCESS of a stock subscription plan depends largely upon the manner in which it is presented. Executives and overseers should hold a meeting where the plan would be thoroughly discussed, so that every overseer would be able to explain the matter to the employees in his department. Circulars giving details should be posted in every department.

Meetings should be held for the purpose of further explaining the plan. Care should be taken that foreign help understand all details. An important feature is to see that each subscription is considered carefully so that no one will be over-burdened. The plan must be presented on a dignified basis emphasizing the fact that it is an opportunity and not a plan to sell something. Although it should be the aim to have everyone sympathetic and enthusiastic, no one should be made feel that he is forced to participate.

The essential point is that every employee should fully understand the proposition. JAMES C. MILNE.

Opinion on Night Work

Editor, Overseers' Round-Table:

I DO NOT agree with Pete and Danny on the subject of eliminating night work, since I think that it would be very unfair to the working people as well as to the manufacturers. Think of the number of people who would be added to the ranks of the unemployed.

I may be like Bill is, getting old, but I feel as so many do who are out of work at the present, namely, it would be very unfair to throw any more out of work.

While I do not approve of women and children working nights, I do say to any who have night jobs, hold on to them.

L. E. MILLIKAN.

Editor, Overseers' Round-Table:

FROM THE humanitarian standpoint the elimination of night work would be a step in the right direction, but, like Bill, I have seen so many of these schemes to put industry on its feet over-night fall flat that I am inclined to think that it would be a good idea to proceed with caution.

Many mills have only a limited amount of machinery and must work nights to take care of their volume of business. Suspension of night operations would work a hardship on

*Overseers and Machin*ery

"THERE have been several large machinery expositions this year," Superintendent Chase addressed the overseers, "and they have been particularly important in view of the number of new developments shown. As you know, the management of this mill is greatly in favor of such expositions and the question has come up of whether some of the overseers should be sent, at company expense, to view the exhibits. Naturally only those shows within a reasonable distance of the mill would be considered and only a few overseers selected each year. Now, do you men think that you would secure enough information at such an exposition to warrant the expense?"

"I don't question the value of machinery expositions," Bill spoke up, "but I don't think that the overseers would receive enough benefit to repay the company for the expense involved. The difficulty is that overseers do not have an opportunity to develop the large view which the super and manager possess and are too liable to be unduly impressed by a certain machine or salesman. It is difficult to get the whole picture unless you deal with new machinery and salesmen a good part of the time and we overseers are too busy running our departments to do that. There is too much chance of an overseer's getting all excited about a certain machine and then feeling all discouraged because the super, who knows the whole story about that machine and competing machines, doesn't recommend the purchase immediately. I think it is much better for the overseers to read the impartial descriptions of the machinery, as given in various publications, and then take up with the super any particular machinery in which they are interested."

ery Expositions

"I'll be brief," Pete replied, "but to the point. A few selected overseers should be sent to nearby expositions at the company's expense. If the company is considering certain new machinery send the overseer to look at it. He's the specialist. I disagree with Bill that an overseer is liable to be unduly impressed. The very fact that all makes of a certain type machine are on view would give the overseer a chance to get the whole picture. Overseers are no longer just men who run a department. They are expected to know all about ways and means to improve efficiency, so give them a chance to learn all they can."

"I agree with both Pete and Bill," Hank joined in, "but I also disagree with both of them. I think the overseer gets a lot of information from expositions but I don't think that the company should pay the expenses. Merely let the company give any overseers who wish to attend a day or two off."

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Do *you* think that the company should pay overseers' expenses to visit nearby machinery expositions?

Overseers and others are invited to discuss this and other questions brought up in the super's talks. Letters accepted and published will be paid for without regard to length. Brevity is desirable.

these mills by forcing them to invest in machinery which their business would not warrant. Then there are others who are in a position to increase their mechanical equipment to a place where they will make their day-time production equal to the old schedule and they are just where they started.

We hear considerable comment about night work being unhealthy, but my experience, and observation, leads me to conclude that the health of night workers compares favorably with that of the day workers. G. G. HURD.

Paying Workers by Check

Editor, Overseers' Round-Table:

I SEE more disadvantages than advantages in payment by check. It would be an advantage to the office, since it would entail less clerical labor, but it would be an inconvenience to all receiving checks, and particularly to small tradesmen in the immediate vicinity of the mill. People would want to make a small purchase and receive cash in change, forcing the tradesman to carry a large amount of cash when he is often not in a position to do so.

Again, it would expose everybody's earnings, which is not pleasant, nor advisable. If there were a cut in wages and everybody was supposed to be reduced by the same percentage check payment might tell a different story and friction would result. If a man were on a greatly reduced wage, due to the mill being temporarily on short time or shut down, it would add insult to injury to have this exposed, particularly if he were an overseer or super supposedly on a permanent salary. A. COOPER.

Editor, Overseers' Round-Table:

PAYMENT BY check represents progress. Cash payments were all right in the days of the ox-cart, or even in horse and buggy times, but we are living in a mechanical age.

From the office standpoint payment by check certainly is an economy as it eliminates a lot of unnecessary work which a bank is better equipped to handle, such as: providing the currency, keeping proper change on hand, guarding the money, etc. Payroll holdups are so frequent that they hardly make the front pages of newspapers, to say nothing of individual holdups. Then again, checks eliminate mistakes.

However, arrangements should be made with the local bankers, or merchants, so that the employees will encounter no difficulty in cashing the checks. Many a worker looks at a bank only as an institution for the "big guys," but he will soon realize that the bank can give him just as valuable services, especially those who now spend the money but would save for a rainy day if they had an account. F. A. R.

On Visiting Other Plants

Editor, Overseers' Round-Table:

EVERY MEANS of increasing the knowledge of overseers should be encouraged. Periodic plant visits would certainly afford a means of acquiring knowledge, but the disadvantages far outweigh the advantages.

The overseer who introduces new methods of alterations to his plant would be very dissatisfied if he knew that the results of his labors and research were open to inspection by all overseers. The only individuals who would benefit would be the overseers who are devoid of initiative or enterprise. All discussions relative to plant improvement, modern methods, new machines, etc., can take place at technical institutions, machinery exhibitions, or through technical publications, without any of the above disadvantages.

Mechanical improvements and scientific organization tend to make profits, but the enterprising overseer who does not hesitate to alter his plant or methods is most likely to make additional profits. If plant inspections were allowed there would soon be no differential advantage. A. W., England.

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Summary of Discussion on Stock Participation

The large majority of contributions were in favor of granting employees the opportunity to subscribe to company stock on the installment basis. Considerable emphasis, however, was placed upon the manner in which such a participation plan should be handled. It was stated that the stock should be offered at an attractive figure, that every means should be utilized to tell the story to the workers, and that no pressure be brought to bear upon those who preferred not to subscribe. The principal benefit of the plan was said to be the increased interest which stock ownership gave employees in the company welfare.

NEWS about MEN

John N. McCullaugh, managing director of the National Association of Hosiery and Underwear Manufacturers, who was elected to the board of Tubize Chatillon Corp. recently.

H. N. SLATER, vice-president of the Slater Co., Inc., Webster, Mass., was named a member of a committee to consider the problems of the cotton dyeing, finishing and bleaching industry and to report on remedial steps which may be taken cooperatively, at a meeting of representatives of the industry held in Providence, R. I., on Oct. 30. DR. SAMUEL M. JONES, president of the Arnold Print Works, North Adams, Mass., is chairman.

MARK B. HOLTON, of the Chipman-Holton Knitting Co., Ltd., Hamilton (Ont.), Can., has been appointed vice-president of the Canadian Woolen & Knit Goods Manufacturers Association, in place of J. A. BURNS, who temporarily filled the position.

R. E. BARNWELL, of Lockwood Greene Engineers, Inc.; JOHN A. LAW, president of Saxon and Chesnee Mills, and H. A. LIGON, president of Arcadia Mills and an official of Fairforest Finishing Co., Spartanburg, S. C., entertained the 12 French textile mill executives on Monday and Tuesday, of this week, visiting a number of textile plants.

DR. HOMER GAGE, president of the Crompton & Knowles Loom Works, Worcester, Mass., has been appointed chairman of a citizens' committee by the mayor of Worcester to study and recommend ways and means to reduce unemployment in that city. Other members of the committee are: J. LESTER PERRY, district manager of American Steel & Wire Co.; FRANK H. WILLARD, president of the Graton & Knight Co.; MERLE BELL, president and treasurer of the Bell Co.; GEORGE S. BARTON, president and treasurer of Rice, Barton & Fales, Inc.; FRANK ROE BATCHELDER, president of the Mills Belt Co.; C. R. BROWNELL, president of Worcester Tire Fabric Co.

D. ST.P. DUBOSE, an executive of the Consolidated Gas & Electric Co., of Baltimore, Md., has been elected treasurer of Durham (N. C.) Hosiery Mills.

J. WHITNEY BOWEN, treasurer of Flint Mills, Fall River, Mass., has been elected president of the recently organized General Cotton Corp. The corporation has for its object the purchase and strengthening of weak mills in the fine cotton goods industry and is allied to the stabilization movement now under way. FRANK L. CARPENTER, treasurer of Davis Mills, is treasurer of the General Cotton Corp.

H. B. SCHAEFFER, sales manager, Spencer Corp., who has been in charge of that company's office at 320 Broadway, New York, for the last five years, was elected vice-president at the regular meeting of the board of directors at Spindale, N. C., Oct. 28.

C. C. CRANFORD, president of the Asheboro (N. C.) Hosiery Mills, and a director of the First National Bank, of that city, was recently elected to the directorate of the High Point, N. C., branch of the North Carolina Bank & Trust Co.

ABRAHAM KULIN, vice-president and treasurer of the Kulin Waste Co., wool waste, Worcester, Mass., and MRS. KULIN, returned on the S. S. "Majestic" on Oct. 28, from a five months' tour of Europe.

J. B. BUTLER, of Leigh & Butler, textile machine agents of Manchester, Eng., is now visiting the Canadian branch of the firm in Montreal.

ALBERT PALMER, of the Crompton & Knowles Loom Works, spoke to the seniors and juniors in the textile department of Clemson College, S. C., on Oct. 20. Mr. Palmer presented an illustrated lecture dealing with the subject of weaving costs as affected by modern weave room methods and machinery.

FREDERICK N. NIEDERHAUSER is now a member of the technical staff of the Tubize Chattillon Co., and his time will be divided between this company and the Carolina Rayon Mills, Burlington, N. C.

C. FREDERICK BUTTERWORTH, treasurer of the Draper Corp., Hopedale, Mass., has been elected chairman of the town finance committee, succeeding the late FRANK J. DUTCHER, president of the Draper Corp. G. RUSSELL GOFF, assistant treasurer of the same corporation, was elected clerk to succeed Mr. Butterworth.

C. H. SCHENCK, formerly secretary of John K. Stewart & Sons, Amsterdam, N. Y., has been re-elected a director of the Mohawk Valley Towns' Association for another term.

THOMAS A. CAMPBELL, JR., formerly assistant to the secretary of the Aragon-Baldwin Cotton Mills, Inc., with headquarters at Chester, S. C., has gone to Greenville, S. C., where he has become associated with Ralph E. Loper & Co., cost accountants.

EMERSON J. LOY, paymaster for the Boston Duck Mills of the Otis Co., Bondsville, Mass., presided at the Worcester-Hampden Republican Senatorial convention held in Spencer, Mass., on Oct. 30.

ERWIN N. DARRIN, assistant agent of the Draper Corp., Hopedale, Mass., has returned from a trip of several weeks to Mexico.

W. N. CORK, of Rock Hill, S. C., started work in the offices of the Rock Hill plant of the Aragon-Baldwin Cotton Mills, Oct. 27. He was formerly in the offices of the Arcade Cotton Mills in Rock Hill.

MARVIN SHIRLEY, district manager of the Bureau of Foreign and Domestic Commerce, U. S. Dept. of Commerce, Charlotte, N. C., on Oct. 29 delivered the second of the annual series of lectures to students of the State College Textile School, at Raleigh. Mr. Shirley took as his subject "Cooperation on a Practical Basis," and described in detail the cooperative services which the U. S. Dept. of Commerce renders to the textile industry.

Alfred J. Cormack, manager, London plant and European distributing center of Jantzen Knitting Mills.

JOHN CAMPBELL has been appointed manager of manufacturing operations of the various plants of Dominion Woolens & Worsteds, Ltd., with head office in Hespler and mills in Peterborough, Milton and Orillia, Ont.

CHARLES P. GRIERSON has been appointed manager of the Oxford (N. S.) Can., Mfg., Ltd.

T. E. HATCH is now manager of the Greenwich Bleachery, East Greenwich, R. I., and THOMAS H. BRYANT, who has been in charge of the dyeing at this plant

for the last 16 years, has been named for the position of superintendent.

HALSTEAD HEAP, formerly of the Imperial Printing & Finishing Co. and Davis & Catterall, is now superintendent of Rock Hill Printing & Finishing Co. ARTHUR B. GROSS, formerly of U. S. Finishing Co., has been elected assistant superintendent and JESSE R. SMITH is divisional superintendent covering finishing and packing departments.

A. J. HEDGEPATH, superintendent of the Easley Mill No. 2, Liberty, S. C., has been put in charge of the No. 3 plant also.

J. H. WELLS has been appointed superintendent of the knitting department of the Greenwood (S. C.) Hosiery Mill, succeeding EVERETT F. COREN, who has gone to Anderson, S. C., where he has similar work.

J. B. CONNER, who has been overseer of spinning of American Cotton Mills, Inc., plant No. 1, Bessemer City, N. C., has been appointed superintendent.

ROBERT CRASWELL has been appointed second hand in the weave room at the Abbeville (S. C.) Cotton Mills.

A. H. BAUGH, head of the weaving at Saratoga-Victory Mills, Albertville, Ala., has been transferred to a similar position at the Guntersville (Ala.) plant of the same company.

D. L. JONES, formerly of Camden, S. C., has been appointed overseer of weaving at the plant of the Arkwright (S. C.) Mills near Spartanburg.

GEORGE R. KRAUSE, of Keene, N. H., has not taken the position as overseer of finishing for Bridgewater (Vt.) Woolen Co., as reported last week.

ALEXANDER LINTON, formerly with the Bonner-Worth Mills of Peterboro, Ont., has been appointed supervisor of dyeing at the plant of Dominion Woolens & Worsteds, at Hespler, Ont., Canada.

J. W. QUINN, who was overseer of carding at the Hampton Spinning Mills, Clover, S. C., has been promoted to assistant superintendent of Hampton and Hawthorne Divisions.

ROY STOGNER has resigned as day overseer of spinning and carding at the Chadwick-Hoskins Co., Pineville, N. C.

GEORGE TIBBETTS, former overseer of the cotton spinning department of the Thorndike Co., Thorndike and West Warren, Mass., has accepted a position in Jacksonville, Fla., and, with MRS. TIBBETTS left for the South this week.

H. S. WHITTENTON has been promoted from second hand to overseer of weaving at the Tupelo (Miss.) Cotton Mills, succeeding A. L. SUTTON, recently resigned, and V. P. BRAMLETT, loom fixer, was promoted to second hand in weaving, to fill place made vacant by Mr. Whittenton's promotion.

J. L. BEAVER, formerly of Landis, N. C., is now overseer of weaving at the Micholas Cotton Mills, at Opp, Alabama.

A display of synthetic yarns and unique fabrics collected from all parts of the world by Dr. Charles E. Mullin, professor of textile chemistry and dyeing, Clemson College, S. C. It includes silk-hand jacquard woven pictures, resembling steel etchings, spray printed work on satin, batik designs on cotton from Java, a valuable hand woven coffin cloth from Sombre made of hand-dyed yarns and Japanese stencil work. This shows collection on display at Southern Textile Exposition.

Obituary

Frank Claasen

Frank Claasen, for 10 years managing director of the Mutual Adjustment Bureau of the wool goods industry in New York, died at his home in Rockville Center, Long Island, Oct. 29 at the age of 61 years. He had been ill for several months. Born in Germany, Mr. Claasen came to this country 20 years ago. During the intervening years he had a wide experience in all departments of several woolen and worsted mills, serving as technician for various mills and men's clothing manufacturers. He was considered an expert in locating the conditions in mills which were causing faulty fabrics. He is survived by his widow and one daughter.

Daniel R. Greenwood

Daniel R. Greenwood, president of the Globe Dye Works, Philadelphia, died Oct. 26 after a short illness. Mr. Greenwood was president of the firm for 23 years, and was identified with textile industry for more than 46 years. Besides being prominent in the textile business he was active in other fields, being chairman of the board of directors of the Second National Bank, president of the Frankford Hospital, a member of the school board and active in the affairs of the Union League. Surviving him are his widow, a brother and a daughter-in-law.

John Quintin Gant

John Quintin Gant, founder and proprietor, Glen Raven Cotton Mills, located near Burlington, N. C., died suddenly Oct. 27 at the age of 83 years. He was born July 18, 1847, near Altamahaw, N. C., and was a prominent figure in the business circles of Alamance County for more than 50 years. He is survived by his wife and nine children. Funeral services were conducted in Burlington, Oct. 29, at the Church of the Holy Comforter.

Joseph Firth

Joseph Firth, a former overseer for many years for the Hamilton Woolen Co., Southbridge, Mass., died at his home in Cleveland, Ohio, on Oct. 15. He was born in England 45 years ago and came to this country when a boy. He moved to Cleveland three years ago.

Joseph Brigham

Joseph Brigham, former master mechanic for the Uxbridge (Mass.) Worsted Co., Inc., at its Granite Mill, Pascoag, R. I., died in a Providence, R. I., hospital on Oct. 4, following a week's illness. Mr. Brigham was 65 years old and lived in Burrillville, R. I., nearly half a century. He was head of the mechanical department of the Lincoln Mills, Burrillville, for 30 years. He leaves a widow and one son.

Andrew Wheeler Green

Andrew Wheeler Green, who once operated knitting mills in Acton, Ontario, died recently at his home in Toronto. Mr. Green who was in his seventy-ninth year was a pioneer in the Canadian textile industry.

Emil Dick

Emil Dick, formerly agent of the Barker Mills, committed suicide Sept. 30 at his home in East Auburn, Mass. Mr. Dick was 70 years old and retired from the textile industry some time ago.

Groves C. Meaders

Groves C. Meaders, 72 years old, head of a large mattress manufacturing plant in Greensboro, N. C., died Oct. 10 from a paralytic stroke which he suffered while seated at his desk in his office.

NEWS about MILLS

Cotton

*Calumet Cotton Mills, Hogansville, Ga., have awarded contract for construction of two-story brick addition to Newman Lumber Co., La Grange, Ga. Robert & Co., Inc., of Atlanta, are the engineers.

Elberton (Ga.) Cotton Mills. All of the departments are now operating on a full-time day schedule, giving employment to more than 100 operatives, who had been out of regular employment for approximately three months. On Oct. 9 the carding and spinning departments resumed operations on a day schedule and later all of the departments resumed operations.

York Mfg. Co., Saco, Me., recently acquired by the New England Public Service Co., Boston, Mass., operating electric light and power utilities, has begun an expansion and improvement program at mill to cost about $700,000. Work will include installation of considerable new machinery for increased capacity. W. Gerald Holmes, industrial engineer of the New England company, is in charge.

*Lancaster Mills, Clinton, Mass., in liquidation, are to be sold at public auction on either Dec. 1 or 2. This is practically the last step in winding up the affairs of the century old corporation. The management states that the liquidation of the inventory is almost completed; that $385,000 has been received from the sale of machinery up to July 1; through the liquidation of the assets all creditors are being paid in full; that no offers have been received for the plant property.

Butler Mill, Taunton, Mass., will resume production at once, giving employment to a working force of about 150 persons. The plant has been idle since last March.

Utica (N. Y.) Looms, Inc., upholstery goods, are now operating on overtime schedules with an enlarged force.

American Cotton Mills, Inc., No. 1, Bessemer City, N. C., are reported to be changing from tire fabrics to yarn and has installed three winders and another will be installed shortly.

Chadwick-Hoskins Co., Pineville, N. C., reported Nov. 3, going on a day and night schedule for three weeks, then standing a week, followed by another same three-week schedule.

Consolidated Textile Corp., Raleigh, N. C., is running on a full-time production schedule at its local Pilot Division mills, and will continue on that basis for an indefinite period.

Esmond (R. I.) Mills have leased space in an industrial building at Granby (Que.) Can., and will establish a new branch mill at that location.

*Indicates previous mention of project.

Fruit of the Looms Mills Co., Ltd., Providence, R. I., recently organized with a capital of 500 shares of stock, no par value, to operate a cotton mill in this vicinity, will be represented by Francis B. Keeney, 1310 Turk's Head Building, Providence, one of the incorporators. Other incorporators are Frank H. Swan and Ernest A. Jenckes.

Conneross Yarn Mill, Anderson, S. C., which has been closed for about two years, has recently been leased by the Standard Warehouse Co., for cotton storage space. The Standard company is removing the machinery and other equipment, preparatory to converting it into a storage warehouse.

Isaqueena Mills, Central, S. C., manufacturers of print cloths and pajama checks, are operating on a full-day schedule with no night work.

Hampton Spinning Mills, Clover, S. C., are operating 40 hours day and 44 hours night. This plant manufactures two-ply combed yarn for the mercerizing trade.

Dunean Mills, Greenville, S. C., have purchased additional bobbin cleaning machinery from the Terrell Machine Co., of Charlotte, N. C.

Judson Mill No. 2, Greenville, S. C., is now operating full-time during the day. This mill ran only five days each week for some time, but is now operating five and a half days each week, shutting down each Saturday at noon. **Judson Mill No. 1** is also running five and a half days each week, although a small part of the equipment is idle. Neither mill operates at night.

Fort Mill (S. C.) Mfg. Co., sheetings, is on a full-time schedule.

Mollohon Mfg. Co. and the **Oakland Cotton Mills,** two plants of the Kendall Co., Newberry, S. C., and the **Addison Mills** of the same company at Edgefield, S. C., are operating on a full-time day and night schedule.

Santee Mills, Orangeburg, S. C., are at present on three-day per week schedule. Present indications are that the mills will resume full-time operations in near future.

Waxahachie (Tex.) Cotton Mills have work under way on improvements, including installation of additional equipment in the dyeing and other departments. It is proposed to have the plant ready for an increased production schedule at an early date.

Southland Mfg. Co., Norfolk, Va., has been chartered for the manufacture of cotton and woolens, with an authorized capital stock of $25,000, by R. E. Murray, National Bank of Commerce.

Gibson Mill, Marysville, N. B., and the **St. Croix Cotton Mills,** Milltown, N. B., Can., will not be closed down in the near future at least, it was announced by Joseph Dolphin, of Marysville, manager of both plants, who attended a conference at St. John at which Amo Dawson, president of Canadian Cottons, the parent plant, was present. At Marysville the Gibson mill has had the time increased from three days a week to four days recently, and at Milltown the plant is running full-time but with a reduced staff.

Wool

Waterman Worsted Co., Inc., Putnam, Conn., is not planning to move to Manchester, N. H., as has been previously reported but will take the best of the machinery from the Putnam plant and place it in the **Devonshire Mills** at Goffs Falls, N. H., with which it will be merged. The old looms in the latter plant have been changed over to modern automatic looms. W. H. Duval & Co., Inc., of New York, who are interested in the Waterman mill will also continue to be interested in this mill and it is reported that Allen Lane Co., who have been identified with the Devonshire Mills will also continue their interest.

Israel Putnam Mills, Inc., Wilsonville, Conn., have been forced to discontinue operations because of the lack of water in the Maanexit River. The plant operates entirely on water power. The product of the mills is now manufactured elsewhere.

Barrymore Seamless Wiltons, Inc., Stamford, Conn., contemplate the erection of an addition to the weave shed of the former plant of the **H. E. Verran Co., Inc.,** on West Main St., which they have taken over. The addition is to be of brick, steel and reinforced concrete construction, one-story, 153x192 ft., with a saw-tooth roof. B. F. Newton, Philadelphia, is in charge of the work. Belanger Co., New York, architect and engineer, made the preliminary sketches and announced that bids would close on Nov. 3.

Assabet Mills of the **American Woolen Co.,** Maynard, Mass., are to shut down indefinitely when present orders are filled, according to word received from the Boston office of the company. The mills are one of the largest of the company and have employed more than 2,600 at one time.

American Rug Works, Thorndike, Mass., have leased space in one of the vacant mills of the Thorndike Co., now owned by the S.C.S. Box Co., Inc., and will start manufacturing operations in a small way shortly.

Smith Mills, Inc., Worcester, Mass., suitings, overcoatings and fancy woolens, are operating nights in some departments.

Sargent Textile Co., Worcester, Mass., has been incorporated with 500 shares of capital stock without par value to manufacture mohair and worsted yarns in a former plant of the Queensbury Mills, Inc., 134 Gold St., Worcester. Operations already have been started. James Sharpe, president of the Queensbury Combing Co., operating the combing department of the Queensbury Mills; Walter S. Taft, Oxford, Mass., treasurer

of the same company and G. Stanley Whittemore, a former Worcester business man, are incorporators of the new company, which will not conflict with the **Queensbury Combing Co.**, according to its officials.

Maine Textile Co., Camden, Me., has filed papers of incorporation at the Knox County Register of Deeds office in Rockland. Its purpose is to take over and operate the old **Mount Battle Woolen Mill.**

Newlands & Co., Ltd., Galt (Ont.) Can., are having plans drawn for a substantial addition in order to accommodate their increasing business. The very latest type of spinning frames will be installed for producing the finer counts of yarns used in weaving worsted cloths.

Knit

Pauline Hosiery Mills, Inc., Evansville, Ind., have been chartered with a capital of $50,000 and 5,000 shares of stock, no par value, to operate a local knitting mill. The new company is headed by George L. Krauss and Claude B. Brooks, both of Evansville.

Warner Knitting Co., Clayton, N. Y., has increased operations and is running near capacity in all departments.

Fonda (N. Y.) Silk Fabric Co., glove silk and silk jersey cloth, is maintaining full-time weekly schedules with a normal force.

Samax Rayon Mills, Inc., New York City, have just been formed to manufacture knit rayon cloth for men's and women's underwear trade, it is announced by M. Kaplan, head of the concern. The firm has taken quarters at 195 Chrystie St., where it will start this week, operating with 12 knitting machines on the premises, but intends to add more later, according to Mr. Kaplan. Articles of incorporation filed at Albany list the capitalization at $20,000.

A. W. Niemeyer & Co., Burlington, N. C., which have been incorporated by A. W. Niemeyer, of Burlington, and J. T. Baker and H. T. Baker, of Charlotte, N. C., are now completing installation of three full-fashioned hosiery machines and the order has been placed for four more machines of this type which will be installed as soon as they arrive.

Elder Hosiery Co., Burlington, N. C., recently organized by Clifton Elder and associates, has secured a mill building there, and the new concern will manufacture both full-fashioned hosiery and men's spiral knit hosiery. The work of installing 30 seamless hosiery machines is now well under way and they will be put into operation as soon as they can be installed. Twelve full-fashioned hosiery machines have already been installed and are now operating.

***McPar Hosiery Mills**, Marion, N. C., have announced that a large number of additional employees will be needed when the installation of 25 new knitting machines has been completed. The plant has been operating 53 knitting machines for the manufacture of men's fancy half hose.

Phoenix Mills, Inc., Statesville, N. C., manufacturers of sweaters, are now running their plant to full capacity.

*Indicates previous mention of project.

Berkshire Knitting Mills, Reading, Pa., are reported to be running 24 hours a week on three-day shifts. Night work is practically eliminated and the company is said to be on the smallest schedule in years.

Silk

Willimantic (Conn.) Silk, Inc., is installing 100 looms, necessitating additional employees.

Susquehanna Silk Mills, Jersey Shore, Pa., have resumed operations in the auxiliary departments, following a shutdown since Aug. 20. It is planned to begin work in the weaving department at an early date.

Northampton (Pa.) Textile Co., recently organized with a capital of $10,000, to operate a local silk mill, will be represented by Morris Caplan, 533 Allen St., Allentown, Pa., treasurer.

Bruck Silk Mills, Ltd., Cowansville (Que.) Can., will be placed on full-time operation as from Nov. 1, according to I. I. Bruck, president of the company. Operations have been running at about 75%.

Rayon

DuPont Rayon Co., Ampthill, Richmond, Va., is placing additional machines in service at its local rayon mill and will advance capacity.

Canadian Celanese, Ltd., Drummondville (Que.) Can., has let the bulk contract for an addition to its artificial silk manufacturing plant to the Newton Construction Co., Sherbrooke, Que., and work has now been started.

Finishing

***Associated Dyeing & Printing Co.**, Paterson, N. J., recently chartered under Delaware laws to take over the **Associated Dyeing & Printing Corp.**, in receivership, has filed notice of organization to operate in New York with a capital of 450,000 shares of stock, no par value.

Floc-Art Print Works, Inc., Paterson, N. J., have leased part of the Radiance Mill and started operating a cotton and rayon flock printing plant. When installation of machinery is completed, the plant will have a total daily capacity of over 40,000 yds. C. O. Greasan, of Newark, is president and Frank Winters general manager and superintendent.

Southeastern Bleach & Dye Works, Inc., Salisbury, N. C., have dismantled the machinery and equipment of the plant and some of the machinery has been shipped to the Rossville, Ga. plant of **Standard-Coosa-Thatcher Co.** and to Gastonia, N. C., for the **Arkray Mills, Inc.**

Sayles Finishing Plants, Inc., Saylesville, R. I., have awarded contract to Temple & Crane, Inc., of Boston, to build new additions. Work will start immediately and includes a new concrete, steel and brick building, approximately 76x226 ft., two and four stories high. Also a two-story building 66x70 ft. and a two-story connecting building 36x42 ft., together with several supplementary structures.

Textile Patents

CARPETS and rugs, Method of treating. 1,777,393. DeHaven Butterworth, Philadelphia, Pa. Assigned to H. W. Butterworth & Sons Co.

HOSIERY, Drying and pressing apparatus. 1,777,705. Julius Otto V. Stetten, Philadelphia, Pa. Assigned to Philadelphia Metal Drying Form Co.

JACQUARD cards, Punching of, for use in lace and other weaving. 1,777,967. Archibald Frame, Darvel, Ayrshire, Scotland.

KNITTED fabric and Machine for knitting the same. 1,777,699. Harry McAdams, Philadelphia, Pa.

LOOM, Double shuttle. 1,777,387. Richard Greenleaf Turner, Worcester, Mass. Assigned to Crompton & Knowles Loom Works.

LOOMS, Picking motion for. 1,777,368. Elbridge R. Holmes, Worcester, Mass. Assigned to Crompton & Knowles Loom Works.

LOOMS, Thread holder for weft replenishing. 1,777,377. Oscar V. Payne, Worcester, Mass. Assigned to Crompton & Knowles Loom Works.

LOOMS, Weft detectors for. 1,777,346. Carl P. Bergstrom, Millbury, Mass. Assigned to Crompton & Knowles Loom Works.

LOOM, Weft replenishing. 1,777,357. Vincent Geronimo, Worcester, Mass. Assigned to Crompton & Knowles Loom Works.

SATURATOR, Silk-warp oil. 1,777,457. Georgé Wilson, Philadelphia, Pa.

SLIVERS, Delivery of from textile machines into cans. 1,777,442. John Pringle Mackie, Belfast, England.

SPOOL support, For knitting machines. 1,777,681. Stanley R. Shelmire, Wilmington, Del. Assigned to Standard Trump Bros. Machine Co.

THREADS, cords and fabrics. 1,777,445. Charles Wilfred Palmer and Stephen Miller Fulton. Assigned to Celanese Corp. of America.

THREAD holder. 1,777,348. Dobaled H. Bushey, Worcester, Mass. Assigned to Crompton & Knowles Loom Works.

TWISTING machine and Thread doubling. 1,777,612. Martin Francis Haas, Wilkes-Barre, Pa.

KNITTING machines, Circuit closer for stop mechanism and the like. 1,778,097. Jacob Wachsman, Brooklyn, N. Y.

FABRIC-LAYING machine. 1,778,128. Chas. J. Sussman, Corona, N. Y.

PILE fabric and method of making the same. 1,778,196. William S. Nutter, Sanford, Me.

FULL-FASHIONED stocking. 1,778,221. Carl Frederick Mack, Philadelphia, Pa.

LOOM TEMPLE. 1,778,290. Abner E. Burgess, Greenville, S. C.

ARTIFICIAL silk, Manufacture of. 1,778,301. Frederick Wilhelm Schubert, Apperley Bridge, Bradford, England.

ARTIFICIAL Silk, Apparatus for use in manufacture of. 1,778,302 Frederick Wilhelm Schubert, Apperley Bridge, near Bradford, England.

THREADS or fabrics, Treatment of, containing cellulose acetate. 1,778,327. Guillaume Lardy, Roussillon, France. Assigned to DuPont Rayon Co., New York.

METHOD of weaving, and apparatus for in. 1,778,335. George H. Perkins, Salem, Mass. Assigned to Esmond Mills, Esmond, R. I.

METHOD of weaving, and apparatus for. 1,778,336. George H. Perkins, Salem, Mass. Assigned to Esmond Mills, Esmond, R. I.

MEANS for removing warp threads from the lease in warp thread tying and like weaving machinery. 1,778,480. Ulrich Bischoff, Aarau, Switzerland.

COTTON - gathering machine. 1,778,587. Birdie A. Crumley, Wilson, Tex.

ARTIFICIAL fibers, Method of and apparatus for treating. 1,779,103. Lewis A. Paley, Villa Park, Ill.

BOBBIN-CLUTCH attachment for whirls. 1,779,019. William St. Pierre, Manchester, N. H.

KNITTING machine. 1,778,974. Thomas Scott Grieve, Leicester, England.

KNOTTING device, Particularly for uniting together the threads of warps. 1,779,312. Willibald Hammer, Uster, Switzerland. Assigned to The Firm Zellweger, A. G., Uster, Switzerland.

LATCH NEEDLE. 1,779,249. Alexander C. Parlini, Woodside, N. Y. Assigned to Gotham Knitbac Machine Corp.

REKNITTING apparatus. 1,779,248. Alexander C. Parlini, Woodside, N. Y. Assigned to Gotham Knitbac Machine Corp.

SKEIN-YARN beating machine. 1,779,021. Wilhelm Taschner, Krefeld, Germany.

Questions and Answers

We undertake to answer, free of charge, to the best of our ability, questions pertaining to textile matters received from any regular subscriber to TEXTILE WORLD. We do not undertake, however, routine analysis of yarn or fabric, or investigation involving unusual expense.

Inquiries should give the fullest information and data possible. In the case of damage to material, a sample should be sent. All inquiries must be accompanied by the name of the person inquiring, not for publication, but as evidence of good faith.

Letters expressing opinions or voicing criticism are cordially invited. These will be signed by the correspondent's name unless the letter itself contains a request that the name be withheld.—EDITOR.

Bleaching Woolen Yarn

Technical Editor:

In the August 23 issue of TEXTILE WORLD *I note that you give directions for bleaching Angora wool. Will the same treatment bleach ordinary wool, and what would happen with a 1-in. iron pipe under the slats in the tank? The pipe is used to heat the water. I was told about a peroxide bleach at one time, but was given to understand that it required a number of operations, so I was not interested in it. Recently another man informed me that he was bleaching by just soaking the yarn in a peroxide bath; then he named a chemical to be used in connection with this bleach. Can you tell me how to bleach yarn by the peroxide method? I refer to all woolen yarn.* (7338)

We advise the bleaching of all-wool or part-wool yarns as follows: The yarn is first scoured, either by the hand-roll method or in the regular yarn-scouring machine, using about 3% of a good grade of soap and 1% of ammonia. Treat for 45 minutes at 120° F. Rinse thoroughly and allow to drain, or better, hydro-extract. If the yarn is exceptionally clean, it may be scoured and bleached in one process, although we do not advise this method, since difficulties causing considerable trouble may arise.

Prepare the bleaching bath by adding to every 100 gal. of water from ¾ to 1 gal. of 100-volume hydrogen peroxide and 3 lb. of silicate of soda at 42° Bé. If the scouring and bleaching are carried out in one operation, add also 3 to 4 lb. of a good wool-bleaching oil. After the ingredients have been added to the water, stir thoroughly and heat the bath to 130° F. The wool yarn prepared in hanks is now placed carefully in the bleach bath. Do not pack tightly or agitate; otherwise the yarn will become badly tangled. While adding the yarn to the bleach, keep the steam turned on slightly, so as to compensate for any drop in temperature caused by the cool wool. Be careful, however, that the temperature does not rise over 130° F. When the bleach vat is loaded to capacity, place a lattice-work top over the mass to prevent the hanks from rising above the surface of the liquor. Turn off the steam, cover the top of the vat with canvas or cloth, and allow the wool to bleach over night. In the morning remove the wool and rinse thoroughly to remove all traces of chemicals. A soaping is conducive to a clearer white and softer feel.

We strongly advocate that you remove the iron pipe from the vat and replace it with a lead coil which is exhausted outside the vat. This will eliminate any chance of iron rust being blown into the vat from the steam line or boiler. Iron not only causes stains, but tenders the wool where it comes in contact with it, and also decomposes the bleach liquor.

◆

Soaking, Throwing, and Sizing Rayon

Technical Editor:

Will you kindly inform me how to size 75-denier, 18-filament, first-quality, bright-luster, Enka rayon to make a satin warp, 50/5/1, 84 picks? Will you inform me also how to soak and throw 100-denier, 40-filament, Enka rayon to make 54-56 turns? (7343)

The 75-denier, 18-filament, Enka rayon can be sized with various commercial rayon sizings. The actual concentrations to employ will depend upon the sizing method to be used—skein, modified cotton slasher, or rayon warp sizer. The size manufacturers whose names we are enclosing will gladly furnish free information and probably free technical service with their sizes. Home-made formulas of glue, thinned starches, glycerin, and softener have to be adapted to local conditions by experiment.

It is an open question as to whether or not rayon actually needs soaking before crepe twisting if it is to be woven in steam-heated rooms having relatively low and constant humidity (50% or under). Rayon-manufacturing companies have formulas which they recommend. These usually consist of glue or gelatin, soluble coconut oil or soap, or emulsions of oils or waxes in water. The last-named products are made with soaps (including triethanolamine soaps), either added as such or in the form resulting from the previous partial conversion of the oil or wax into soap by thorough cooking with alkali. The concentrations of these solutions are low (oils and waxes often run to 10% on weight of water for skein treatment). Sized skeins are extracted and dried, and wound and twisted on cotton up-twisters or on silk twisters. Twisting-machine manufacturers have technical-service departments conducted for the benefit of customers, which are very helpful.

◆

Dyed Fabric Not Fast to Crocking

Technical Editor:

I am having considerable difficulty in dyeing tin-weighted fabrics, in that the dark shades rub off or crock. I dye these goods at a temperature of 57° Celsius in a bath containing a small amount of silicate of soda and glauber salt. For dark brown shades I use the following dyestuffs: Direct Brown RXY, Chrysophenine C, Fast Orange FSW, Acid Green D conc., Formyl Violet F4B, Chlorantine Red 3B, and Chlorantine Fast Black F extra.

For dark red shades I use Fast Red conc., Chlorantine Red 3B, Direct Brown RXY, and Chlorantine Fast Black F extra.

The worst difficulty is encountered with dark-brown dyeings. Any light you can throw on this trouble will be appreciated. (7344)

It is common practice in the larger silk piece dyehouses to dye tin-weighted silk with neutral-dyeing colors in a bath consisting of glauber salt, phosphate of soda, and soluble oil at a temperature of 180° F. The bath is kept slightly alkaline by the phosphate, which is not strong enough to retard the dyeing, but prevents loss of the weighting. Silicate of soda is much more alkaline, and while it is not so favorable to the dyeing, it increases the weight, because a tin-weighted fabric seems to be able to take up silicate to an enormous extent. The extra weighting with silicate can easily be carried to excess, and result in the loss of elasticity, sheen, and hand. A dyestuff applied at the same time may be attached only to the chemical precipitate, rather than to the silk fiber itself. Color that is ingrained in the silk will be fast to crocking, but color that is in the form of a lake on the surface is likely to rub off.

Regarding the dyestuffs used, you will note that all except the Direct Brown RXY are dyes that are well known and are listed in the *Color Index* and *Schultz & Julius Tables*, being used by most reputable dyers. We suggest that you try to find a substitute for the brown, either making the shade with orange, black, and red; or using a true neutral-dyeing brown that has an affinity for the silk itself.

◆

Pulled Threads in Full-Fashioned Hosiery

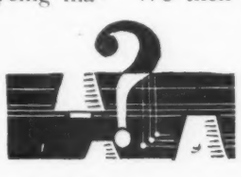
Technical Editor:

We enclose herewith a silk stocking which looks as if some of the fibers were damaged. This stocking was picked out of a net having four dozen, some of which had similar defects, but not as many and not as decided or jutting. Will you give us your opinion as to the cause or causes of the defect. (7340)

We have examined the silk stocking and find that the fabric is almost entirely free from sleazy knitting. Therefore, in no sense of the word is the trouble due to the sleaziness. Neither is the silk responsible for the condition of the stocking, as we find the quality very good.

We find the sole cause of trouble to be from the goods having come in contact with an abrasive surface of some description—most probably the rough interior of a dyeing machine, and if not the dyeing machine, the hydro-extractor. You state that the sample was taken from a net, but the net was undoubtedly of such large mesh as to permit portions of the fabric to protrude through the openings and thereby come in contact with the rough surfaces of either the dyeing machine or extractor. This explains why the particular sample was in worse condition than other goods in the same net.

No matter how smooth the interior of a dyeing machine when first built, it cannot be expected to remain smooth enough to dye light-weight silk hosiery without danger; and the longer a machine is operated, the rougher the surface becomes. In addition, many hosiery manufacturers use heavy safety pins for fastening their nets together. We consider this practice a dangerous one, since the heavy pins will scratch the interior surface of the dyeing machine. Add to this the many other natural causes for wearing of the metal, and the result will be a surface unsuited for coming in direct contact with the hosiery.



We strongly advise the use of dye nets tied with soft cotton string; nets for light-weight goods should preferably be made of cheese cloth.

We are quite sure that if you will see that your goods are correctly netted and that the walls of your extractor are lined with light cotton sheeting to prevent netted goods coming in direct contact with metal in extractor basket, your trouble will be practically eliminated. Pulls are due to various other causes, such as rough knitters' benches, looper and seaming tables, and general careless handling of gray goods; but pulls from gray goods will never be as pronounced as are those in sample submitted.

◆

Dyed Stock Not Fast to Fulling

Technical Editor:

Under separate cover I am sending you a sample of black dyed stock; also some of the undyed stock. This black is dyed with hematine, or logwood. I have been using hematine on four grades of stock for some time and have never experienced any difficulty in making the shade fast to fulling. Lately, on the enclosed stock, the color is bleeding badly in fulling. The previous lots of this same grade of stock did not bleed at all. It is my opinion that there is something in the wool which causes this. I have tried washing the stock with ammonia before dyeing, without any better results. If you will work the dyed sample in soap and hot water, you will notice that the lather is badly stained. (7323)

We have tested your dyed sample by hand-fulling, using an alkaline soap, and find that the lather is stained, as you reported.

In order to prove whether or not the stock is at fault we dyed your stock with logwood crystals as follows: We first applied a chrome bottom consisting of 5% half-refined tartar, 3% bichromate, and ½% bluestone; the solution was brought to the boil in 45 min., and the stock treated at the boil for 1½ hour and washed thoroughly. We then dyed the stock in a bath containing 20% of logwood crystals; the dyebath was brought to the boil in 45 min., and the stock dyed at the boil for 1½ hour and washed thoroughly. We finally made a fresh bath containing ½% of chrome, aftertreated one-half of the dyed stock for ½ hour at

THOUSANDS of inquiries are handled annually by the Technical Editors. In order that as many readers as possible may benefit from this service, we select problems of general interest for publication each week.

190° F. in this solution, and washed the sample thoroughly.

You will notice in the case of the dyed samples we are returning that the aftertreated dyeing, when hand-fulled, does not stain, whereas the dyeing which was not aftertreated stains the same as your dyeing.

There are a number of factors which influence the fastness properties of dyed stock. There is a possibility that you are using a new shipment of hematine that is not up to standard. Perhaps you are bringing to the boil too rapidly both in the chroming and in the dyeing. Also the time of boiling in the chrome may have been cut down. In both chroming and dyeing the boil should be lively. Goods should be washed thoroughly after the chrome. To insure good fulling fastness, the stock should be given an aftertreatment with chrome in order to form an insoluble pigment with any remaining logwood that may be left in the stock.

It is our opinion that your trouble is not caused by the stock, but is due to a change in your method of dyeing or in the quality of your hematine. We suggest that you try the formula we employed for a chrome bottom, use your regular formula for dyeing, and then aftertreat as directed.

◆

Fancy Teeth in Wool Carding Rust and Break

Technical Editor:

We have been having considerable trouble with our carding process due to the rusting and subsequent breaking of fancy teeth, the cause of which we have been unable to determine. This defect has occurred only on cotton-backed, wool-faced fancies. The leather-backed fancies on the same machine have been unaffected. Also, those fancies which have been affected are of two different, but well-known, makes.

So far as we can determine, this condition has manifested itself only within the last eight months, with no apparent change of local conditions or mode of operation. The rust appears on the teeth where they enter the wool face, which is also rust-stained at that point. This condition is not confined to any particular portion, but extends over the entire surface of the fancy. A new fancy placed in operation five months ago has now commenced to shed its teeth, and these pass into the felt batts, producing rust stains and holes in the finished piece.

The emulsion used in the mixing prior to carding has been unchanged for several years and consists of about 15% mineral wool oil, less than 1% soda ash, and the remainder water. Humidifiers and humidity also remain unchanged, as does everything else connected with the carding. If there is anything in your experience which suggests the cause and remedy of this difficulty, we should greatly appreciate knowing it. (7341)

This trouble seems to arise from an excessive amount of moisture in the air, and probably occurs when the room is closed at night or over the week-end, when ventilation is cut off. Lack of sufficient heat in the room at such times tends to increase the relative humidity. Wool has the natural characteristic of absorbing moisture. The quantity which it absorbs varies with the temperature and relative humidity. When humidity is high, the wool face on the fancy can absorb sufficient moisture to cause the wire to rust at the point mentioned. Unfortunately, there is no surface contact with the stock at this point of the wire of the fancy to brush the wire free of moisture and burnish it. Such contact would serve to remove some of the excess of moisture in the face of the foundation. There is likewise no contact at this point in stripping. Hence the fancy wire is more susceptible to damage by moisture than is the cylinder wire.

◆

Oil in Dyed Hose

Technical Editor:

We enclose samples of dyed hose, together with rider ticket, fly leaf, and sticker, which, after being boxed a few weeks, show grease or oil spots. We also enclose a sample of the yarn used before knitting. Will you tell us if this sample of yarn contains any oil, wax, or conditioning fluid that would be liable to come out in finishing?

We also enclose a sock marked No. 1, which has been scoured and boarded; and one marked No. 2, which has not had any processing after knitting. Kindly advise as soon as possible what kind of grease spots these are and what causes our difficulty. We use a dyebath containing only the dye and glauber salt. The goods are run about 50 min. after the bath comes to a boil. In scouring, we use a 3% solution of soap flakes, and run 30 min. at 120° F. We then give three 20-min. rinses at the same temperature. Kindly advise if there is danger of leaving stockings on the live-steam drying forms too long. (7351)

From the information which you have furnished, it is hard to tell whether you dye your goods first and scour afterwards, which is not likely, or whether the formula you give for scouring is used to prepare the goods previous to dyeing, which would be the proper way. You also omitted to state whether you dye in an acid bath or whether glauber salt is the only aid to dyeing.

The dyed stockings submitted are dyed fairly well but lack that soft, lofty feeling which wool should have. This indicates that the scouring and finishing are not properly conducted; and that is the cause of the oily spots developing on the paper after the goods have been boxed for some time. The sample of yarn submitted shows no more than the usual amount of oil and grease which knitting yarn of that kind should have; and it, together with the natural grease of the wool, should be thoroughly scoured out of the goods before dyeing.

We suggest a scouring solution made up with 2% of soda ash (free from caustic) or ammonia, together with your soap. You should take care that your scouring bath with the goods in it produces a copious lather at all times during the scouring, thus showing that the bath is not breaking down. If soft water is not available in your dyehouse, the percentage of soap may also have to be increased for good results. In one of the rinsings a small amount of ammonia should be added to wash out thoroughly all traces of the soap used in scouring and to keep the goods soft. If you will follow these instructions, there is no reason why your tickets and labels should get greasy at any time after the goods are finished. Leaving stockings on live-steam drying forms too long causes the wool to feel harsh, but would have no other after-effects.

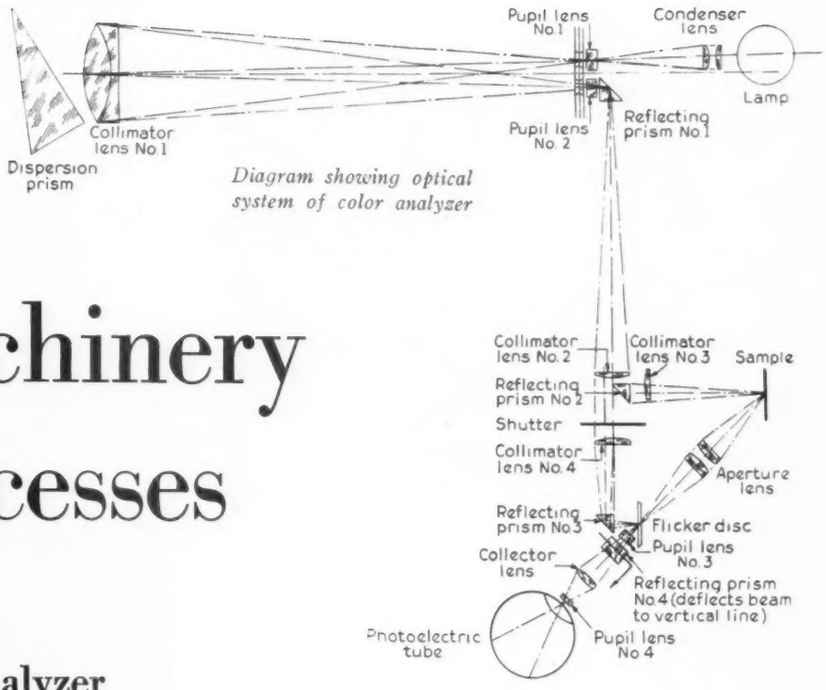


Diagram showing optical system of color analyzer

New Machinery & Processes

Recording Color Analyzer

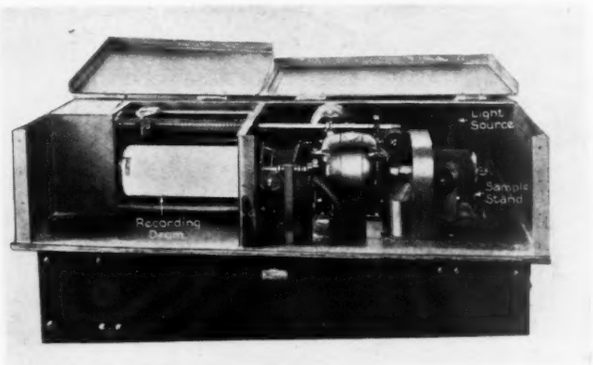
A RECORDING color analyzer, announced some time ago as a laboratory development, has now been placed on the market by General Electric Co., Schenectady, N. Y. The device has been made more compact and sturdy than the laboratory instrument, without loss of speed or accuracy. The analyzer, a photoelectric device, automatically draws for permanent record the color curve of a sample in the visible spectrum. It is so constructed that either solid substances or transparent materials can be analyzed.

Light from a vertical, tungsten-ribbon filament passes into the slit of a dispersive system. Emerging from this system through another slit as monochromatic light, it is passed into a collimator. Here it is divided; half is taken off with a right prism and brought to a focus at a sample stand, and half passes through a shutter and is brought to focus on a flicker disk, which has on its surface a standard white pigment. Light from the sample is collected and brought to a focus in the plane of the flicker disk and is passed into a photoelectric tube.

As the flicker disk is revolved, the photoelectric tube views alternately the standard and sample at a rate of 60 alternations per second. A greater amount of light reflected from the standard than from the sample results in a pulsating photoelectric current which is amplified electrically and used to control a motor-operated shutter in the standard light path. This shutter will operate until the beams are of equal intensities. The balance point is indicated by the recorder.

As the record drum revolves, the wave length of the light passing through the exit slit of the monochromator is varied at a uniform rate from 400 to 700 millimicrons, and the curve obtained indicates at each wave length the position of the shutter which allows an amount of light to be reflected from the standard equal to that being reflected from the specimen. The shutter is so constructed that the opening is directly proportional to the amount of light passing through. Approximately 3½ min. are required to obtain a characteristic curve—the period from the time when the pen starts drawing the curve until it is raised after completing the curve. Since the analyzer is a recording instrument, it does not require the services of an operator with specialized training in optics; and as it uses a photoelectric tube, it has ample sensitivity at the violet end of the spectrum.

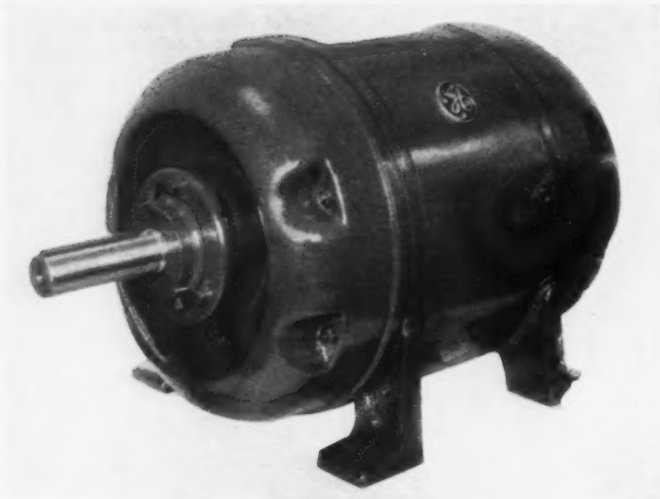
The importance of the recording color analyzer lies in its value to industry, in nearly every branch of which control of the color or products is necessary. Accurate measurement of colors is the first concern of manufacturers of fabrics, particularly in the delicate shades which often deceive the eye. Color control is also of basic importance in the making of inks, paints, dyes, and paper. One of the important fields of usefulness for the recording color analyzer is said to be in cataloging of the curves of different dyes, so that new colors with predetermined characteristics can be obtained at any time by the proper mixture of standard dyes already at hand.



View of recording color analyzer with front removed

Motors for Hazardous Conditions

GENERAL ELECTRIC CO., Schenectady, N. Y., announces a new line of totally enclosed, fan-cooled motors for hazardous conditions, specified as Class 1 in the National Electrical Code. The polyphase induction motors at present embrace ratings from ¾ to 30 hp. in popular speeds, and are especially designed for use in



Totally enclosed, squirrel-cage induction motor for hazardous conditions

explosive-gas conditions, such as are found in gasoline refineries, garages, chemical plants, dyeing establishments, and similar locations where the hazard involved is equal or less than that involved with high-test gasoline vapor-air mixtures. These motors are suitable for either indoor or outdoor operation and eliminate the necessity for fire walls and other arrangements now found necessary with the ordinary open or enclosed motor.

In the single-phase motors there are at present ratings from ½ to 2 hp., totally enclosed, for the same service, and fractional-horsepower ratings from ¼ to ½ hp., the latter either the repulsion-induction type or d.c. motors. All these motors are said to comply fully with the specifications of the Underwriters' Laboratories, which tested several sizes preparatory to the formal listing of the complete line.

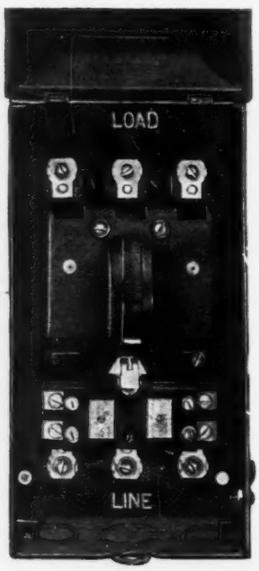
Motor Watchman

MOTOR WATCHMAN, a small, simple, motor-starting switch with resettable automatic overload protection, is announced by the Switchgear Department, of Westinghouse Electric & Mfg. Co., East Pittsburgh, Penn. This motor watchman is especially suitable for use with textile-loom and machine-tool motors. The fact that it can be reset rapidly makes it especially adaptable for textile motor protection, because this feature permits the rapid resumption of production.

A new method of automatic overload protection is employed, which trips the contacts by heating a preformed bimetallic disk. The disk does not gradually deflect, but maintains its shape up to a predetermined point. When this point is reached, the disk snaps to another position, thus affording a positive tripping means. In its normal position the upper side of the disk is convex, the rim being rigidly held. When overheated, this side becomes concave. There is no intermediate point—the action being of bullet speed.

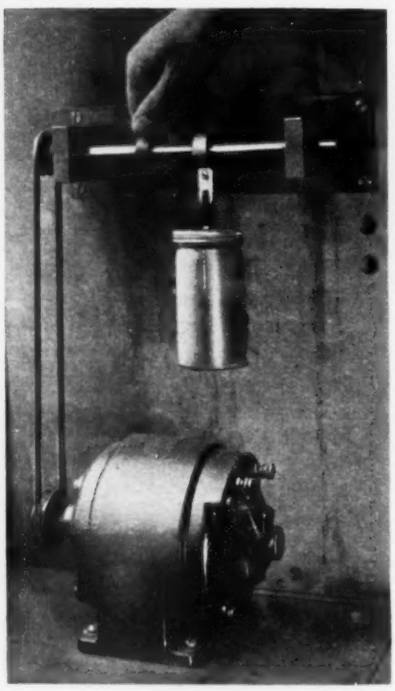
Self-Lubricating Bearing Metal

ANNOUNCEMENT has been made of the development of a new bearing metal in the form of a self-lubricating bearing, by W. C. Wilharm, of the Westinghouse Research Laboratories, East Pittsburgh, Pa. This bearing can be mounted without oil or grease in motors which turn only a few revolutions and are then idle for a considerable time, and can also be used with lubricant instead of the present oil-requiring bearing materials. In the latter case, if the supply of lubricant should for any reason become inadequate, this bearing is capable of resisting the heating action of friction for a considerable length of time by means of its own lubricating qualities. For these reasons, and because of its high efficiency, it is believed that after this metal has been placed on a production basis and the cost reduced, it will be applicable to the construction of bearings wherever they are used—whether in delicate instruments, heavier equipment, or electrical apparatus. The bearing is the result of tests in the Westinghouse Research Laboratories to determine what materials reduce friction most. When it was found that these materials could not be incorporated in an oil, they were put in the bearing.

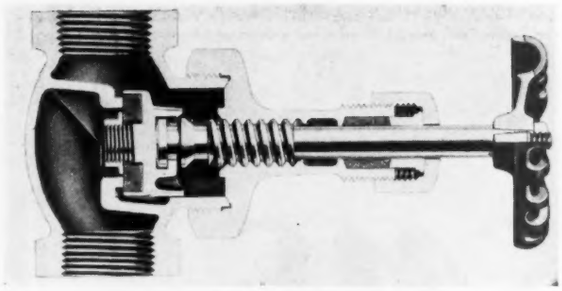


Motor starting switch

The bearing is made by mixing one or more metallic powders with one or more materials yielding a soapy substance. The ingredients are put in a cold mold and subjected to a pressure of approximately 40,000 lb. per sq.in. The temperature is gradually raised until it reaches about 400° F. After keeping the mold at this temperature for one-half hour, the pressure is raised to 200,000 lb. per sq.in. The pressure is then released and the mold allowed to cool and removed from the mold. Bearings made of this new material can either be made to certain specifications according to the mold used or they can be made in blank and machined to the size desired. This permits low production cost where many bearings of the same size are required, and availability of many sizes where there is need for few bearings of various sizes.



Self lubricating bearing on test in Westinghouse Research Laboratories



Sectional View of Bronze Valve

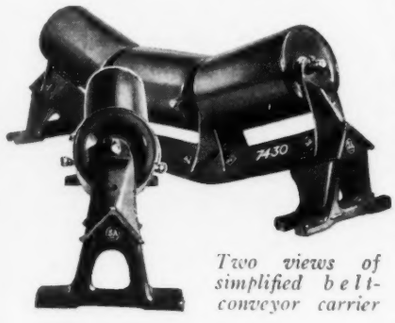
Bronze Valves

BRONZE valves in a number of styles and sizes have been brought out recently by Jenkins Bros., 80 White St., New York. The valves are designed for use with steam up to 150-lb. working pressure, or with oil, water, or gas, up to 250-lb. working pressure. They are constructed with a one-piece, screw-over bonnet; slip-on, stay-on disk holder; and renewable disks. Use of this type of bonnet in combination with the disk holder is said to be a new departure in bronze-valve design which prevents springing or distortion and results in a valve of unusual strength. The valves are made in globe, angle, cross, and check types for all standard services.

Belt Conveyor Carrier

A SIMPLIFIED roller-bearing belt-conveyor carrier, known as the "Pacific Type," has been announced recently by the Stephens-Adamson Mfg. Co., Aurora, Ill. The carrier is of the three-roller, 20° trough design; the construction is of heavy-gage pressed steel, with the single exception of the end-stand castings, thus making the carrier light in weight, strong, rigid, and practically unbreakable.

Each roller turns upon two Timken tapered roller bearings housed within an inner hub of steel tubing and protected from dust and moisture by an intermeshing labyrinth grease seal for each bearing. The tapered roller bearings used are large in size and are arranged to carry end thrust as well as radial loads. The inner hub extends the full length of each roller and prevents any opportunity for misalignment of bearings. A unique arrangement has been provided for adjusting and setting the bearings for proper clearance. Positive lubrication is insured by an Alemite fitting for each bearing.



Two views of simplified belt-conveyor carrier

Every roller, with its bearings, shaft and grease seals, is a self-contained unit that can be interchanged with any other roller without disturbing the bearing adjustment. The cross member is a single structural-steel angle, formed and punched to eliminate all but one standard pressed steel bracket which is interchangeable for all sizes of carriers. The angle is self-cleaning and eliminates any tendency for material to collect and hinder the free action of the rollers. The carrier is built in sizes for conveyor belts from 18 to 48 in. wide.

New Dyestuffs

E. I. du Pont de Nemours & Co., Inc., Wilmington, Del., has placed on the market Leucosol Blue 2G Double Paste, a vat blue developed particularly for the printing trade. It produces full bright blue shades, which are greener than those given by Leucosol Blue G. Shades produced with this product are said to be very fast to light and washing. Leucosal Blue 2G is suitable for application on cotton, silk, or rayon which is to be used for dress goods, draperies, and similar materials.

Sulfanthrene Yellow R Paste, a new vat dyestuff, has been announced recently by the E. I. du Pont de Nemours & Co., Inc., Wilmington, Del. This color produces brilliant, greenish shades of yellow, which are said to be very fast to washing and chlorine. It also shows fairly good resistance against light. This product is recommended for both rayon and cotton, producing shades of equal strength on both fibers. It is suitable for use on circulating types of closed machines, the jig, and padder. It is also suitable for printing on cotton and rayon, and is recommended where a vat ground is desired, as it discharges practically to a white with Sulfoxite C in combination with Leucogene W.

Two new Indigosols, manufactured by Durand & Huguenin S.A., have been announced recently by Carbic Color & Chemical Co., Inc., 451 Washington St., New York. These two products, Indigosol Violet IBBF and Indigosol Purple IR, are homogeneous dyestuffs, said to have good fastness properties which make them of much importance in textile printing. Indigosol Purple IR is used, not only in calico printing, but also for the printing of all-rayon, rayon-cotton, wool, and silk. The prints on cotton are of good fastness to light, very good fastness to soaping and excellent fastness to chlorine. Indigosol Violet IBBF is printed on cotton or viscose by the chlorate steaming process, by the Indigosol developer process, or by the nitrite or bichromate process. The shades obtained are of good fastness to light and very good fastness to washing and chemicals. This dyestuff is suitable for resist styles and for colored chlorate discharges and for colored resists under Aniline Black. It may also be used for printing wool and silk.

Newport Chemical Works, Inc., Passaic, N. J., has recently placed on the market three new dyestuffs—Thianthrene Scarlet G Paste Fine, Anthrene Red G2B Double Paste, and Newport Acid Anthraquinone Blue 3G. Thianthrene Scarlet G Paste Fine is a vat color especially of interest for printing on cotton, rayon or pure silk, in either direct or colored discharge patterns. It reduces easily, ages rapidly, and, due to its fine and grit-free paste, is said to be an excellent working color. The general fastness is satisfactory, particularly to washing, chlorine, perspiration, cross dyeing, and acid or alkali spotting. Somewhat creamy white discharge patterns are obtained when it is used as a ground color on the above-mentioned fibers.

Anthrene Red G2B Double Paste is a vat color used in the production of deep, bluish reds on cotton and rayon. It it stated that it has excellent fastness to practically all color-destroying influences and is unaffected by metals, and may, therefore, be used for the dyeing of cotton in all stages of manufacture. It reduces easily, holds its vat well, and although it exhausts rapidly, it levels well.

Newport Acid Anthraquinone Blue 3G is a blue dyestuff of the acid anthraquinone series and is distinguished by excellent fastness to light. It also levels well, making it useful as a shading color, since it may be safely fed on at the boil. The fastness to fulling may be considered only as moderate when the color is dyed acid, but a great improvement in this respect is obtained by after-chroming. Although primarily a wool color, this product is useful for the dyeing of pure or tin-weighted silk from either neutral or acid baths. The excellent fastness to perspiration and rubbing should be particularly noted in this connection. The color may be used for direct printing on wool or silk, either pure or tin weighted. It is not, however, dischargeable. A pure, brilliant, sky blue lake is obtained with barium salts or on aluminum hydrate.

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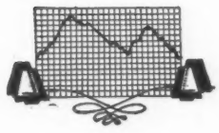
TEXTILE WORLD ANALYST



Weakness Indicated in Wool Situation

Neither Raw Material Nor Goods Have Yet Acquired Strength, Says Dr. Haney

Summary: **Wool supplies seem large in comparison with demand and, though signs of potential improvement are apparent, the immediate attitude indicates some further decline. Worsted sales yarns have apparently been produced in excess of demand. Cloth demand is too weak to allow more than a temporary stabilization.**

•

The analysis and forecast by Dr. Lewis H. Haney, Director, New York University, Business Research Bureau, which regularly appears on this page, considers various branches of the textile industry from week to week. The conclusions reached in the Analyst are mostly forecasts and generally apply to a time two or three months ahead. The Analyst is based on statistical data and does not reflect temporary trade sentiment.

THE month of October brought some slight ease in raw wool prices, in both domestic and foreign markets. Although there has been more resistance to declines in this country, it is nevertheless true that wool markets throughout the world have been easy. November will witness the marketing of the new Southern Hemisphere clips. In view of the large carryover and poor financial conditions in several producing countries, the market will be severely tested.

Demand from the manufacturers is scant. Bradford remains depressed, and manufacturing activity in this country declined in September. Spring goods buying is behind last year, and even cold weather has not produced a normal demand from retailers for heavyweight goods. It is not likely that demand will have any sustained improvement until general business is once more on the upgrade, and when that will be is not yet indicated.

Favorable Factors

1. Fine merino wools continue to hold firm in foreign markets. Crossbred wools are nearer their normal relationship with finer grades.
2. Manufacturers' supplies are believed to be light.
3. Wool imports are at a low level.
4. Woolen spindle activity gained more than seasonally in September. Mill consumption of raw wool was also larger.
5. Wholesale dry goods sales made a sharp gain in September.
6. September billings of goods exceeded production; stocks declined nearly 17%.
7. Readjustments are stimulating the introduction of economies in manufacturing.
8. Gains in silk and cotton prices in October have reduced their competitive advantage over wool.

Unfavorable Factors

1. About 77,000 bales were held over from the last London auction. Australian markets are irregular, restriction of offerings brings no permanent strength. South American wools are easy. Buyers assume a waiting attitude pending the marketing of the new clips during a period of financial stress.
2. More foreign wools are nearing importing parity with similar domestic grades. Americans are buying more Australian wool.
3. Receipts of raw wool at Boston increased in October, although there is usually a decline in that month. Receipts are large compared with their average relationship with mill consumption, which suggests an unfavorable supply situation.
4. Activity of combs, worsted spindles, and looms declined in September, after allowing for seasonal changes.
5. Bradford top prices have fallen to new lows for recent years; yarn prices are also weak. Both are below parity with raw wool.
6. Spinners' and manufacturers' current replacement margins have declined again.
7. Garments cut in August were only about two-thirds of the volume of garments cut in 1929.
8. Spring bookings are behind last year.
9. General business and the stock market have fallen to new lows.

The balance of the foregoing bull and bear points seems to indicate that the latter have greater weight. It is still true that the forces tending toward lower raw wool prices are more immediately important, while those making for higher wool prices are largely potential.

It is somewhat encouraging, however, to note that several maladjustments have become less acute. Medium wool prices are more nearly in line with those of fine goods. The competitive position of raw wool prices improved slightly in October. Broadly, there is some lessening of the spread between receipts and consumption. There is a more normal relationship between the activity of looms and wholesale dry goods sales. Whether or not all of these *tendencies toward* an improved position of raw wool will continue, is uncertain. In any case, they tend to neutralize several growing maladjustments.

These maladjustments include the decrease of foreign wool below similar domestic grades and a narrowing of the margins of combers, spinners, and weavers, both here and abroad. The lack of balance between spindle and loom activity suggests that for spinners the situation will become more uncomfort-

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able. One remedy is lower raw wool, but with a Wool Marketing Corp. resisting declines, that alternative is not so likely to be realized in the near future. The other alternative is a pick-up in demand for wool textiles, but new low levels of business activity give little hope for an increase in consumer buying power. The P-V Line does not yet indicate improvement.

Supply and demand conditions indicate that raw wool prices should decline further. Artificial stabilization schemes might easily lead to difficulties similar to those experienced in the silk and copper industries.

The TEXTILE WORLD index of raw wool prices was 65.4% of the 1921-1928 average in October, against 65.9% in September and 86.7% a year ago. Machinery activity declined in September, which means that there was less demand for raw wool. How large stocks are, it is impossible to say. The Raw Wool Marketing Corporation is reported to have refused to divulge its holdings. This is a short-sighted policy and leads consumers to suspect the worst. A continuation of the pegging policy will probably lead to an increase in imports, as foreign wools continue to decline. Already American buying is reported in Australia.

YARN POSITION WEAKER

The TEXTILE WORLD index of worsted yarn prices during October declined to 75.9% of the 1921-1928 average. This compares with 77.3% in September, and 92.6% a year ago. The reason for the renewed weakness in worsted sales yarn prices has been pointed out in our previous discussions. For some months, a maladjustment has been developing between the activity of spindles and that of looms. Although our index of spindle activity has shown more than seasonal declines since last summer, loom activity has fallen off even more. We interpret this to mean that demand for weaving yarns has been dwindling more rapidly than has the supply.

Spinners' replacement margins and yarn prices have both declined as a result. Since this maladjustment grew larger in September, it is not likely that demand for knitting purposes was entirely responsible for the relatively higher level of spindle activity. We now feel that worsted yarn prices and spinners' replacement margins are likely to decline further.

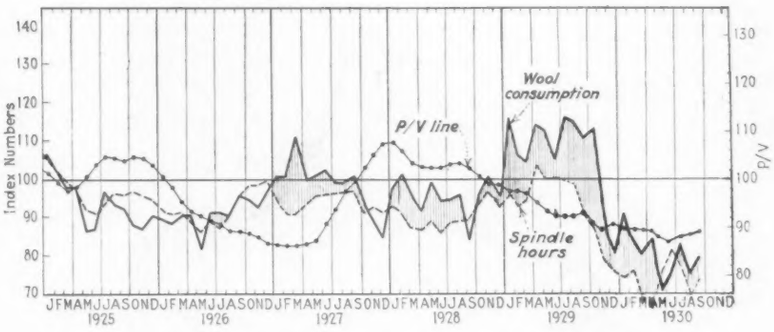
CLOTH DEMAND POOR

The output of wool goods remain sub-normal. Clothing cut in August was only about two-thirds the volume of the year previous. September production statistics compiled by the Wool Institute indicate a decline of 18% from August, and the index of loom activity, adjusted for seasonal variation, also declined to a new low level.

This curtailment of output was accompanied by a reduction in stocks of cloth of about 23% which brought them also to a new low level, thus relieving supply pressure.

Yet the limitations put on supply have had no favorable effect on the average manufacturer's replacement margin. While raw wool has been *relatively* firm, cloth prices have continued to decline. The Bureau of Labor Statistics' index of woolen and worsted goods prices in September was 83.5% of the average for 1921-1928 against 85.5% in August and 94.9% a year ago. This sharp drop in cloth prices brought the index of the manufacturers' replacement margin to the lowest point since March, 1929. Apparently demand has fallen off more than supply.

Trade reports confirm the lack of demand from the goods market. There are, however, some faint signs of encouragement. The low level of stocks, together with the more favorable relationship between billings and production, is potentially favorable. Viewed from another angle, the balance between supply and demand seems to be improving, since loom activity (or cloth production) continues to decline and wholesale dry goods sales have improved. It would not be surprising, then to see cloth prices decline less rapidly in the next month or two.


Index Numbers
P/V
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Wool consumption
Spindle hours
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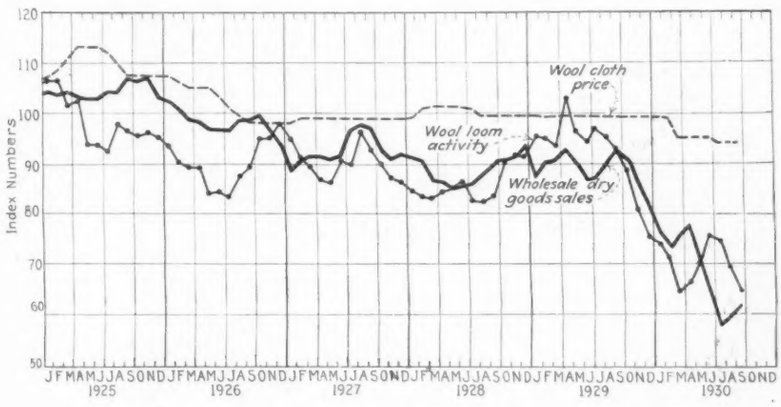
1929
1930

Fig. 1. GENERAL BAROMETER OF WOOL INDUSTRY: Wool Consumption—Grease equivalent; adjusted for a number of working days and seasonal variation, 1921-1928 = 100 (Dept. of Commerce). Spindle Hours—Average of woolen and worsted spindles, per cent active hours to total; adjusted for seasonal variation, 1921-1928 = 100 (Dept. of Commerce). P/V Line—Ratio of general commodity price index to volume of trade (Bureau of Business Research).


Index Numbers
Wool cloth price
Wool loom activity
Wholesale dry goods sales
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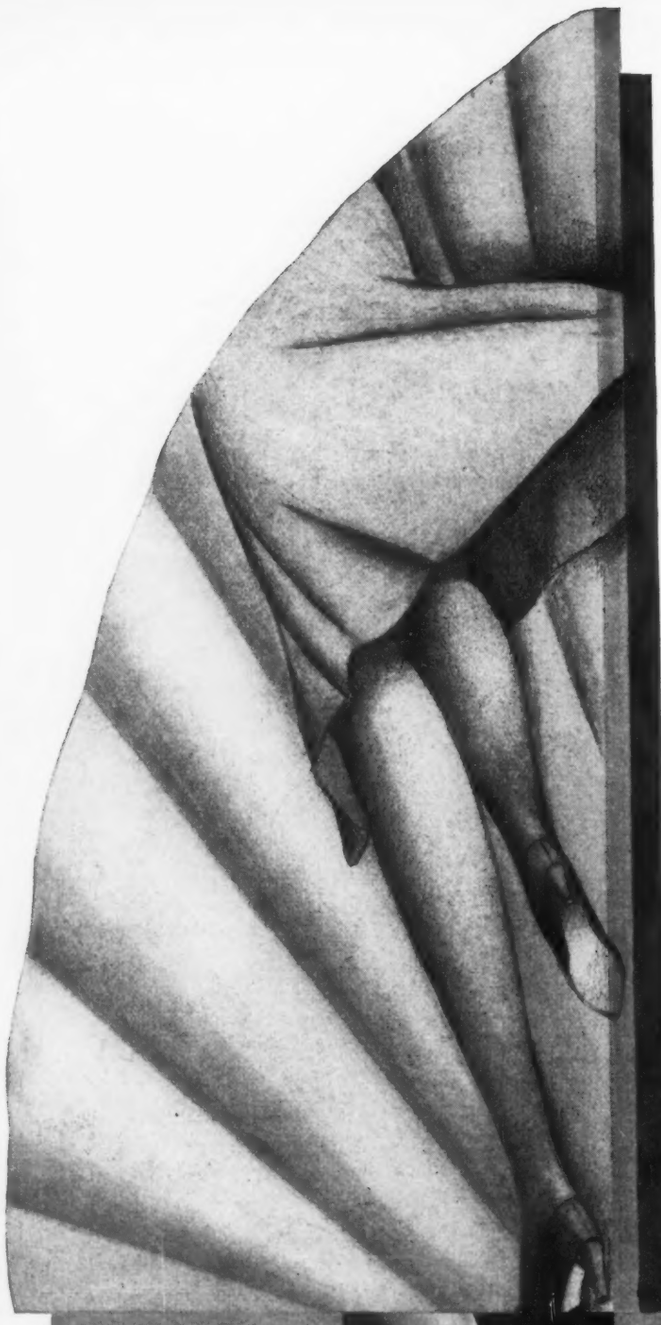
1930

Fig. 2. WOOL CLOTH BAROMETER: Wool Cloth Price—TEXTILE WORLD Index; Loom—Adjusted for seasonal variation, weighted average, Dept. of Commerce; Wholesale Dry Goods Sales—Adjusted for seasonal variation, three-month moving average, Federal Reserve Board; Average 1921-1926 = 100 for all indexes

The Textile Trend

COTTON TEXTILE MARKETS: Volume of business in cotton goods has changed materially for the better during last two months. This trend is more in evidence at present than at any time since it became apparent. The average manufacturer is still operating on schedules which leave much to be desired, and on margins which cannot be tolerated by any manufacturer over a long period. Mills are not yet out of the woods but conditions are pointing in the right direction. Further advances in prices occurred during the last two



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weeks. Mill quotations on print cloths have advanced ½c. per yard since the beginning of September. There is more bidding for next year deliveries, but these are received less enthusiastically by mills who want to see margins expand.

Wool Goods Markets

Shortage of stocks of several lines of wool clothing on retailer shelves has caused a spurt in sales of woolen and worsted fabrics, but, taken as a whole, the wool goods markets show little improvement. Selling of overcoating stocks has been an outstanding development. It is estimated that New York trade alone took 10,000 pieces in the last three weeks. Men's wear fabrics for lower and higher-priced fields are selling much better than goods ordinarily taken for medium-priced trade. Samples of spring lines indicate that several houses are going to try to sell men on idea of color for their new clothing. In women's wear blue, red and green crepe fabrics are selling well for quick shipment, while nubby effects, mostly in black and white, are being sampled for spring by same firms. Lower worsted yarn prices cause buyer hesitation.

Knit Goods Markets

Buyer interest in knit goods has slackened somewhat, due partly to weather conditions and partly to price uncertainty. A reduction in women's full-fashioned hosiery prices by several leading companies, has made jobbers and retailers hesitant; these factors now are waiting to see what the rest of the hosiery mills will do. Current full-fashioned demand is moderate; grenadines show increased movement and numerous mills which had dropped this line, now are back in the field once more. Half-hose is selling well, especially in the popular-price ranges. Heavyweight sweaters are in good call; there is plenty of duplicate business; all orders are small, however, and trade waits for cold weather to spur buying. Winter-weight underwear also moves actively; price tone as a whole is firm, though there were reports that certain mills had cut unofficially. No real lightweight demand is looked for until cold weather brings active retail turnover in heavyweights.

Silk Textile Markets

Raw silk is slightly weaker, but importers continue confident. The exceptionally strong consumption report for October, while it has been anticipated in mid-October buying, is expected to hold prices steady. Demand from weavers is light but continuous. Silk yarns hold their own, and throwsters report improvement. There is scarcity of certain thrown yarns, especially Japan grenadine 87%, the price of which has jumped to $6. Spinners report a good call for doubles, particularly 60/2s. Firms not hitherto buyers of shantung yarns, are now stocking up for production of these fabrics. Broadsilks are uncertain; canton crepe prices have weakened once more, and weavers are cutting drastically to effect quick clearance. The trade expects keen competition on spring shantungs.

Cotton Market Reacts

Buyers Show Hesitation Above the 11½ to 12c. Levels

THE end-October advance which carried the market about $7 per bale above the low records of the month and season, was followed by reactions in cotton futures. The advance to approximately the 12c. level for spring months appeared to meet some increase in hedging, while it obviously attracted a good deal of realizing. The demand from both the trade and speculative shorts also appeared to taper off, as if the trade having bought quite freely on the advance, was inclined to revert to a more cautious attitude as prices approached the 12½c. level for July contracts. The short interest, no doubt, had been much reduced on the rally and the declines which followed reflected considerable reactionary sentiment, This was reflected by some local selling on the easier technical position of the market, and new December, which had sold up to 11.58 on the late October advance, broke through the 11c. level after the Election Day adjournment.

This decline does not appear to have resulted from any one particular feature in the general news, but there may have been a feeling in some quarters that bearish features, which may have been discounted around the 10c. to 10½c. level, might reassert themselves around the 11½ to 12c. mark. It was again pointed out that the statistical position pointed to an increase rather than a reduction in the world's carry-over of American cotton at the end of this season even allowing for a considerable improvement in the world's trade conditions. This view of the market may have been based upon a more or less general belief that higher prices for cotton must depend upon the ultimate reactions of current values on the coming acreage and on ultimate consumption.

Many traders, indeed, think that the attitude of both trade and investment buyers toward the market will be governed largely by their opinion as to the price which will insure a reduction of acreage next spring. It is generally understood, in this connection, that the campaigns for reduction in cotton acreage which are already getting under way in the South have an unusually influential backing. The support of bankers is believed to have been obtained and in various ways efforts are being made to insure a decrease in acreage. At the same time, the average trader in cotton is not inclined to put much reliance upon campaigns for reduced acreage unless they have the backing of a very low level of prices.

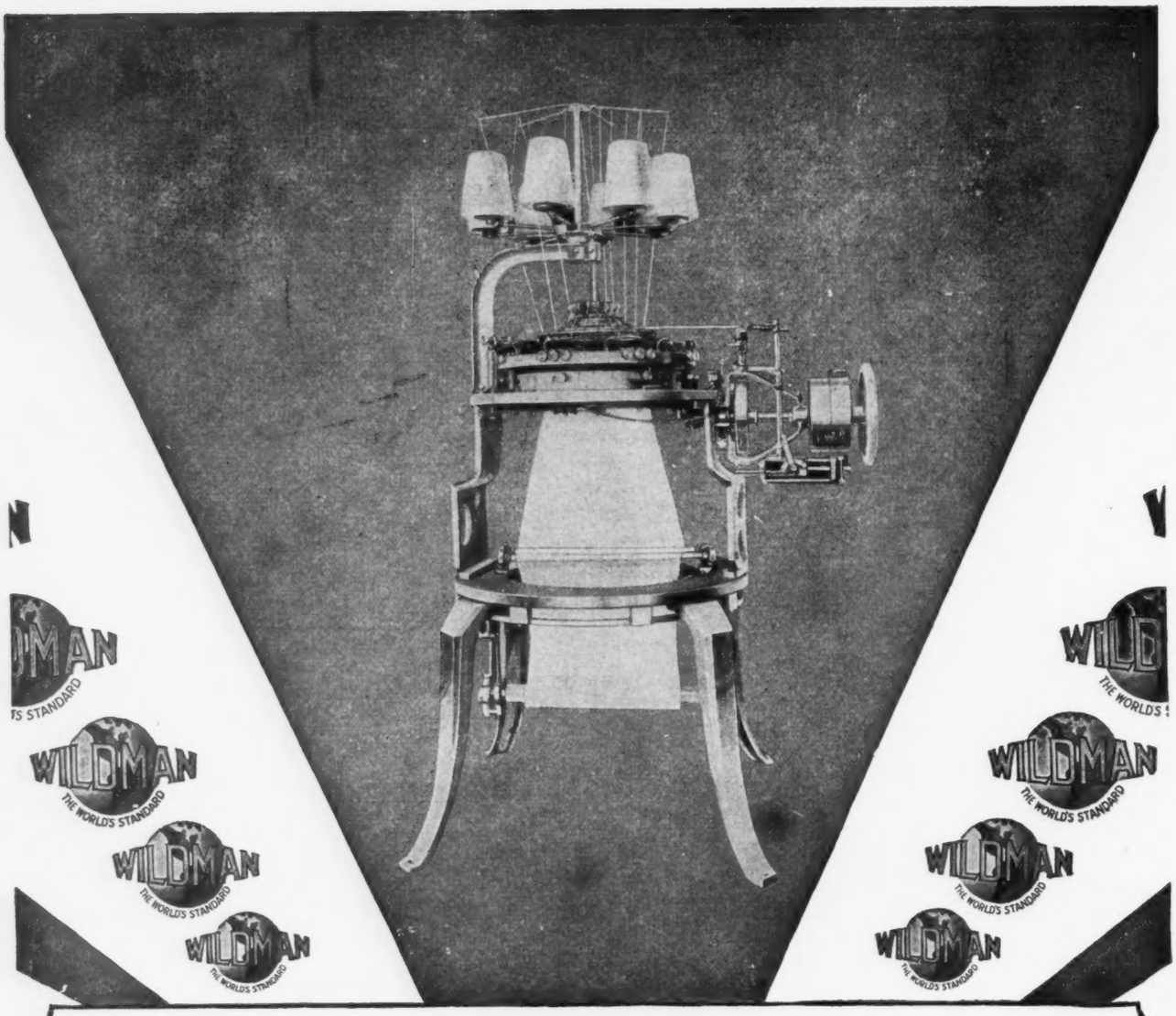
It seemed to be quite generally conceded that at the low levels touched early in October, the market was low enough to discourage planting and to render the effort to secure a reduction in acreage successful. Advances between now and planting time might defeat the acreage curtailment campaign, in the opinion of many in the trade, and this idea, doubtless, has had the effect to qualifying bullish sentiment after the advances of late last month. Perhaps the feeling is that trade conditions have not yet improved sufficiently to sustain advances above 12c. for the late spring or summer months and that the prospects for a substantial reduction in acreage might possibly diminish in the event of advance above the 12½ or 13c. levels.

The more encouraging reports from the cotton goods markets are now finding a reflection in indications of somewhat increased domestic mill activity, which should show in the domestic consumption figures for November, if not in those for October. According to the New York Cotton Exchange Service, world's mill consumption for the month of September amounted to only 878,000 bales compared with 835,000 for August and 1,217,000 for September, last year.

Private reports on the Nov. 1 crop indications have ranged from about 13,761,000 up to 14,766,000 bales. Their publication has been without any particular effect on the market, but uncertainty as to the showing of the Government report scheduled for publication at 11 o'clock this morning (Nov. 8) may have promoted the disposition to even up commitments after the late October advance.

Activity Declines at Memphis

Memphis, Tenn., Nov. 3. — Active demand, fairly broad as to grades and staples wanted, continued in the cotton market here during the first part of last week but was tapering off as the week ended. Action of the market during the last two or three days indicated that much of the recent spurt of buying was for October commitments. Buying has become more selective and more of the character of bargain hunting. Bargains are rather hard to find because of the limited amount of distress cotton. The several agencies through which loans approximating the market value of cotton may be obtained, make holding easier than ever before. Unwillingness of first hands to follow the



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reaction on contract values, accounts in part for diminished spot activity toward the close of last week.

Sales for the week totaled 39,660 bales against 40,179 bales the previous week. Sales out of local stocks, 8,523 bales, were the largest so far this season. Basis is unchanged from the previous week, but seems to be a little firmer in tone. Demand during the week centered on inch to 1 1/16 in. strict low middling and better, but was fairly brisk on bright white cottons in all lengths below 1 1/8 in. Demand for staples, while somewhat improved, was relatively poor. Shippers say mill inquiry is better and that there is a marked disposition to buy at fixed prices. Forward business, it is claimed, is still extremely limited although some bookings run through March.

The weather during the week was only moderately favorable, taking the belt as a whole, for further harvest. Light to heavy frost occurred over most of the northern half of the belt, with light frost extending to the gulf coast.

Cotton Yarn Sellers Confident

Higher Prices Retard Trading Only Slightly

THE tendency continues in favor of the seller. It is more difficult to drive a bargain with spinners and dealers than two weeks ago. Prices are higher; spot delivery is more difficult to obtain and spinners are less willing to sell far ahead. Next year deliveries are priced considerably higher than those to be made before Jan. 1.

There is less of a boom than three weeks ago when cotton was jumping and buyers of yarn were in the market in large numbers endeavoring to buy far ahead at prices current before cotton advanced. Yet conditions during October and up to the time of writing are steadily changing in favor of sellers. While conditions are by no means perfect, they are immeasurably better than one would have predicted 10 weeks ago.

More Confidence Noted

Prices of yarns are at least 1c. higher than a month ago in accordance with advances in cotton during that time. If the seller is willing to cut the latest quotations ½c. then a large volume of business for nearby and future delivery can be booked. The fact that trading is less active, although still good, indicates that majority of spinners and dealers are not pushing sales at present when price concessions are involved. Neither are they pushing sales when buyers want 1931 delivery.

On the latter question they feel that margins are bound to improve. For that reason to sell their early 1931 output at current prices would not be desirable. In view of this it may be assumed that 1931 contracts, when reported, are placed at prices at least 1c. higher than for 1930 shipment.

Forward Delivery Wanted

Despite higher prices for later deliveries there has been a large volume of such contracts during the last two weeks. Sales of single combed yarns to knitters have come in this category, several contracts calling for shipments to be made up to next summer. A number of underwear manufacturers are using combed this season who last year used carded. They will not lower prices of their garments, but instead will raise the quality.

Mercerizers also have booked a substantial volume of orders that will not be completed until the middle of next year. This type yarn has been inactive for months but a decline in prices has invited larger demand. While officially there was no change in quotations up to middle of this week, one firm reported that a large amount of business had been placed 2c. or more under the nominal price list.

This would indicate that at least one processor has been selling at 68c. for 60s-2 although the price of this number is nominally 72c. Buyers confronted with offers of this character have placed large contracts in mercerized yarns. What is more important from processors' angle is deliveries on old contracts, long delayed, have improved materially. September and October shipments have expanded gradually but continually and mercerizers are in much better position than they were two months ago.

Southern Markets Active

Considerably in excess of any recent week was the amount sold in southern markets although here too reports indicate that the subsequent decline in raw cotton had the same effect as in Philadelphia and New York, retarding buying activity to a noticeable degree. Spinners have been reluctant to make concessions and prices in the South are holding firm at the advanced levels made effective last week.

Knitters and weavers in southern market centers have been purchasing carded qualities in approximately equal quantities and dealers report that quotations for 20s-2 warps of average quality have remained steady at 23c.

Sentiment in the combed yarn producing area has been distinctly more optimistic. While mills of the Gaston County section, spinning sale yarns, have continued to operate at only 40% of single shift capacity, there is a better feeling among them and a belief that in near future this rate will be larger due to receipt of new business.

Better Cotton Goods Margins

Still Considerable Room For Improvement in Mill Profits

LET'S not lose our perspective. There is no use contradicting the statements made so many times in the trade and daily press during the last two months to the effect cotton goods business was improving. The change has been worth all the space that has been given to it and the importance of this is not to be belittled. But let's not lose sight of the fundamentals.

There is much, very much, room for improvement if manufacturers are to show profits and this business is to be placed on a paying basis. With all the improvement in sales during the last two months, manufacturers are still running part time, majority on greatly curtailed schedules if one figures 100% single shift as the goal at which they are aiming, leaving out the whole question of night work.

Only Seasonal with Several

Even with night shifts curtailed and women and minors out on these shifts, manufacturers are not running more than a percentage of full time. Further investigation along the same lines shows that while volume has been large during September and October it has been only a seasonal improvement with houses whose statements are not to be questioned, houses which are among the largest in the country.

One of these told Textile World that its volume during the last two months was not up to normal seasonal change for this time of the year. The head of this house put it, "We have not increased our margins of profit during the last two months. Rather we have been able to reduce our margins of loss." This side of the cotton goods situation should not be lost sight of in all the bullish talk that trade and public press is now running on cotton goods.

Mills Not Making Money

If demand of October continues until the end of the year then there will be grounds for believing conditions have improved materially; then we can say

Any old iron

that's costing you money to operate?

"Old iron" is a brutal name for equipment which you regard as the major item of your business but—machinery that was an asset in 1920 may be a liability today. In the last few years obsolete machinery has demonstrated to scores of mills that in the Full-Fashioned Hosiery business it is necessary to choose between modernization and oblivion.

Mills that are still trying to *get along* with equipment that should be scrapped as "old iron" will soon find that profits are possible only with machines whose operating costs are in keeping with the production economies of today.

TEXTILE MACHINE WORKS, READING, PA.

The "READING"
Full-Fashioned Knitting Machine

that improvement has been more than seasonal. Indications are hopeful in this respect. Trading is expanding and prices are becoming firmer. Producers are not willing to commit themselves far ahead.

All these are causes for optimism but we should not be fooled into thinking that in a short time cotton goods trade has done all to be expected of it. To place the mills in a good position, much is yet to be accomplished.

◆Good Demand for Cotton Wastes

THIS was another good week in the cotton waste market. The number of inquiries and the volume of actual business transacted are holding up very well, and this has encouraged a stiffer price attitude on the part of dealers. The scarcity of peeler comber and strips continues to be the chief feature of the market. It was difficult to buy New Bedford No. 1 comber under 10c. this week and peeler strips were held firmly around 8 to 8½c. Egyptian comber was in some demand, but its scarcity made that small demand loom quite large.

There was a larger call for thread wastes this week also. The output of these wastes has been curtailed sharply during recent months, and were it not for the increased utilization of wiping rags the thread section of the market would be in a much stronger position. A few dealers report some improvement in demand for stuffing wastes on a wide range of prices.

Cleavage Seen in Wool Values

Merinos Steady the World Over, But Crossbreds on Down Grade

THE wool district in Boston is generally quiet. Inquiries received cover a rather wider scope, but actual purchasing is for small amounts. Quotations are moderately firm, more so on merinos than crossbreds. The Sydney market closed firm, competition very general, French and American buyers paying the highest prices of the season for choice merinos. Under these circumstances holders of domestic merinos are pricing their raw material firmly.

While there is general agreement that the new selling seasons in South American and New Zealands will move on a lower level this month, the position of merinos in the Australian markets is more satisfactory to sellers and growers. Japanese and Continental buyers have been the largest purchasers in Australia to date and have been competing actively for the best wools. Allowing for the present state of depression, wool is neverthless being wanted and will be bought much more freely when consumers are convinced that prices are more likely to rise than to fall. The fine wool position in the Boston market has steaded itself on Australian cables but the crossbred list is somewhat uneasy under the menace of low offerings in South America, which condition in all probability will be duplicated when the New Zealand sales open at Auckland later in the month.

Total imports of M. V. last season into the United States were 14,400 bales as compared with 21,100 bales in 1928-29 and 7,400 bales in 1927-28. This foreign market has not yet fully opened, but exporters are rushing the season and sending over low quotations. Cabled offerings on Montevideo super-crossbred fleeces, c. and f. on the dates named follow: M.V. 56s and 58-60s, Oct. 28, 18½c.; Oct. 24, 19½c. M.V. 50-56s, Oct. 28, 18c.; Oct. 24, 19c.

Wool Manufacturing Gains

Both woolen and worsted manufacturing made a fair gain during September, all classes of machinery with the exception of narrow looms moving upward from the low points recorded for August. February was the high point for worsted manufacturing this year when the index figures stood at 98, falling to 71 in April and recovering to 95.5 in September. The high point of the year for woolen manufacturing was also in February, the index figure at 83, falling to 63.4 in August and recovering to 71.2 in September. Worsted manufacturing in September was not so far behind the general average for the preceding four years, but woolens were far behind the average. Taking the average monthly activity of 1926 as equal to 100 then the following comparison of distinctive machinery activity for the years and months named becomes possible:

	Woolen	Worsted
1926	100	100
1927 (September)..	109	104
1928 (September)..	110	82
1929 (September)..	106	112
1930 (September)..	71	95

Substitutes Low-Priced

The reworked market is hoping that a distinct expansion in demand for consumption of rags and substitutes will occur in November. There is little upon which to base definite opinion except statistics that are available. Unfortunately these show that for the last four years the activity of woolen cards has shown a decline in November as compared with October. The woolen industry which for a considerable period was maintained at larger capacity production than worsteds, is now very much in second place. During the last month raw materials have been easy in a buyer's market. Fine light merinos, light hoods and white knits as well as the serges and worsteds are all on the bargain counter. The chief promise of immediate betterment lies in the fact that mill inventories of rags, clips and reworks are very low.

Waiting Noil Market

The noil market closed the month with prices generally steady but no large amount of business pending. Business during October was quite disappointing to most dealers, although one or two houses made some good-size sales of merinos. Wool combing in September made a gain of 5% over August, the comb activity standing at 80.6 as compared with the low point of the year of 60.8 in March. So far as it can be judged no further gains were made in October, the latter part of the month featured by slackening of demand for these commodities. Looked at from the statistical standpoint the general woolen mill demand for noils based on an increase of activity in woolen cards showed a 5% gain in September. Advent of cold weather is expected to stimulate the call for noils suitable for blending with wools and waste in woolen fabrics. Makers of hat felts are not particularly busy and the business they place in the very best of noils has been accomodated in part at least by imported superfine noils from Cape and Australian wools. The new tariff which went into force in June has cut down considerably imports of wool thread waste, but has not prevented a fairly good business being done in noil imports.

Waste Inventories Low

The restricted buying of wool waste that occurred in October has left mills with low inventories. Prices on the average showed little change for the month and yet the relatively small amount of business induced a softness in values not quite so evident at the beginning of October. It was more of a buyer's market at the ending than at the beginning of the month. The market involved in the general business depression is not optimistic, and for the small business occurring there is plenty of competition. This results, as might be anticipated, in a general lack of confidence. The market is not weak, though unsteady and uncertain.

◆Wool Goods Stress Novel Designs

THERE is a more hopeful feeling in wool goods. Sellers now say that there is business to be had if one is on his toes and awake to give those who buy, something to talk about. One

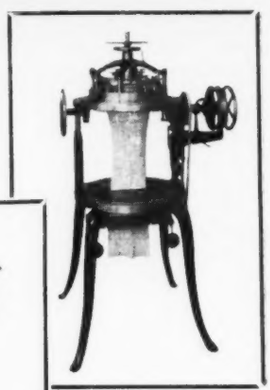
Open Up New Fields of Profit

With BRINTON KNITTING MACHINES

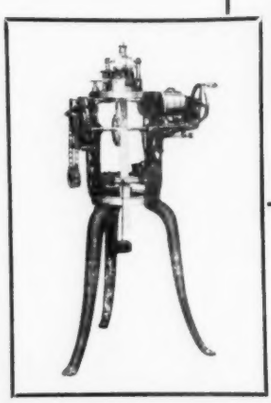
Brinton makes the Knitting Machine you want. Whatever type of merchandise you are making, or are thinking about making, consult one of our engineers and let him help you place the precise machines you need in your mill.

Brinton makes many types of Rib Knitting Machines and Open Top Jersey Knitting Machines in all diameters. Supplement your knowledge with that of Brinton engineers and the Brinton experimental department. These men are called in to solve the problems of mills in every part of the world. Their experience, knowledge and inventive genius is entirely at your disposal.

RIBBERS—of every type.
JERSEY MACHINES—Plain and Fancy stitches.
RIB BODY MACHINES—for underwear and bathing suits.
SWEATER MACHINES—Rib and Jersey Types.
SPECIAL KNITTING MACHINES—from ¾-in. to 36-in.



Plain Rib Body Machine



Single Feed Ribber

H. BRINTON COMPANY
3700 KENSINGTON AVENUE, PHILADELPHIA

BRINTON

CIRCULAR KNITTING MACHINES

of EVERY Kind for EVERY Purpose

of the largest men's wear concerns is working harder than ever before in its history, pushing new lines that are priced attractively. This concern believes that there is business to be had and money to be made if one goes after it right.

Men's Wear Brighter

Spring men's wear lines are brighter and patterns are more startling in some cases than have been seen in many seasons. Several houses are turning to this extreme to offer the buyer "something new" and if the consumer is less conservative in buying his 1931 spring suit than buying most other articles at present then they may have success.

Lightweight fabrics for next spring men's wear are lighter in weight than last year and several houses say they mean thereby to attract some of the business that heretofore has gone to tropicals. They claim the new lines will give lightness in weight and in addition give service that is not to be had in tropicals.

In dress goods lines more activity than in men's wear is seen. Beside a fair interest in crepes for quick delivery, Fourth Avenue houses report a broad line of sampling, indicating to them a good market to come in woolens for spring cloakings, women's suitings and dress goods. Nubby effects, mostly in black and whites, are being sampled actively. Blue, red and green crepes are selling well, out of stocks of fall goods.

Polo Coats For Spring

Napped goods for coatings are in good demand, selling in tan and red effects with plaid backs. Indications are that polo coats for spring will be good sellers. Several houses report that interest in astrakan jackets with polo skirts for wear early next year is expanding.

Worsted Yarn Prices Unsteady

Outerwear Yarn Spinners Lower Their Prices Again

SECOND drop in quotations of outerwear yarns since the middle of last month has been made by spinners who in most instances are quoting on the basis of $1.00 for 2-20s, 50s, English system, representing a decline of 2½c. as compared with last week. Spinners continually on the lower side of price list are quoting even lower prices than $1.00 for this grade.

There have also been numerous price revisions in the weaving section, men's wear mixtures, for example, now being 2½c. lower at $1.67½ for 2-30s, 64s, mixes. These revisions have naturally caused more hesitation among buyers, who do not feel that the bottom has been touched. Until they change this attitude there is likely to be a continuation of the strict hand-to-mouth buying that has been apparent. This is in contrast with situation in cotton yarns, which buyers and sellers agree are touching bottom. In line with this buyers are willing to cover cotton yarn needs far ahead. Nothing of the same has developed this fall in worsted yarns. Its appearance will be eagerly awaited.

This time a year ago 2-20s, 50s were selling at $1.30, or 30c. above present prevailing quotations. While this drop is important there are other textile products which have shown even more marked declines. Possibly this fact has something to do with attitude of worsted yarn buyers at present.

Only Seasonal Improvement

There has been seasonal improvement in the market, but practically all has been of this type, buyers covering their requirements in a conservative manner for fall goods and are content to allow commitments for spring merchandise to come along later.

October was a good month with knitting yarn spinners especially in regard to deliveries; it compared favorably with September in this respect and the two are among the best months this year, a normal occurrence for this trade. The two months are about on a par with the same time a year ago in regard to pounds shipped, but are considerably lower when dollars are compared, largely due to drop in prices of about 23% over this time.

There is little call for finer grades in outerwear counts, largest interest being in quarter blood, showing that manufacturers are buying only for fall goods and refuse to figure ahead with lighter goods made from finer wools for spring lines. Two-ply yarns for knitting have been more active recently than have singles.

Mixtures Are Lower

Weaving counts have been quiet and prices are inclined to go lower in French spun qualities. Lack of demand from men's wear trade is indicated in lower quotations named on mixtures late last week. Buying in this group has been small and majority is content to await receipt of goods orders before placing contracts. Even then amounts are only to cover actual orders in hand. There has been scattered buying of dress goods counts but the total has not been large.

The fact that yarn prices are sagging at a time when wools are showing little if any change, gives the impression that spinners are losing in the fight to improve their margins. A large part of the blame for this is to be placed in the outerwear group where keen competition is the answer, for a limited amount of buying that is to be found.

Holidays Weaken Raw Silk

Slight Recession Offset By Bullish Consumption Figures

RAW silk has lost a little of the gain made during recent weeks, but importers are confident that this is only a temporary lull. Prices are slightly off; Silk Exchange quotations show a drop of five to six cents, as against last week. The undertone of the market is firm, and there are no definite indications that the present downward curve will continue.

The October consumption figures, showing the unprecedented total of 61,937 bales delivery to mills, were published Wednesday and had a healthy effect on the market. The reaction was not violent, as prices had anticipated the report about ten days ago. However, the market tone is still much better than early fall and importers expect the current position to be maintained approximately. The weakness this week was due largely to holiday interruptions; there were holidays both in Japan and at home, and buying interest was light. Broadsilk mills are getting gradually under way on spring schedules and they have a fair amount of raw silk on hand. Orders this week were small and mostly for quick shipment.

More Silk Available

Silk available in New York increased slightly; importers had no difficulty in making prompt shipment. The primary market looks for fair buying up to Dec. 15, which will be followed by a Christmas lull; a rally is expected in January due to the late start of the spring fabric season. Indeed, there is possibility that January may see several weeks of spirited buying. Hosiery mills place little business; all are producing actively but they are covered on requirements, having bought far ahead. These knitters were pinched in the silk decline, and are now hesitant about covering for

spring, 1931. Importers look for demand to ease off, but expect monthly averages to hold above 50,000.

The outlook in Japan grows better, with the approach of the annual shutdown of filatures. The quick turnover during October in the American market served to prevent any appreciable increase in surplus, and if the plan for an extra month's shutdown, in addition to the usual two months closing, goes through, this will help to assimilate the raw silk stocks now warehoused in Japan.

◆Silk Yarns Demand Continues Steady

SILK yarns are holding their own and at the throwsters' end, things seem slightly improved. Throwsters find difficulty in meeting demand for certain grades, notably Japan grenadine 87%, scarcity of which has jockeyed prices up from $5.80 to $6.00; certain thrown silk mills in the New York market told customers this week that they could not fill early orders for this grade.

Thrown yarn stocks are limited, despite active production, due to the very cautious policy of raw silk importers. Hosiery knitters are emphasizing grenadines in their output, and are covering freely for November-December production. Orders show a significant drop after Dec. 31, due to market fear that the first quarter of 1931 may bring a slump. There is a belief among knitters that, while business is on the rise, February will see a temporary slackening, and they are holding off on yarn orders as a precaution. Broadsilk mills buy steadily for quick shipment; 4-thread crepe is particularly active.

Shantung Yarns Active

Spinners enjoy a good call for all doubles, especially 60/2s, and many firms not hitherto buyers of shantung yarns now are showing interest. Weavers have great confidence in the spring prospects for rough goods, due to the excellent showing made by these fabrics last year. Spun yarn prices are firm. Woolen and worsted mills have slackened up on buying, but outerwear knitters placed a fair quantity of business this week. Stocks on hand are moderate.

Canton Crepes Again Cut

Broadsilk Mills Reduce Prices in Effort to Clear

SLACKENING in demand and the desire of mills to clear their winter stocks has brought another break in the price of canton crepes. The reduction runs from 15 to 25c. per yard, and weavers are hoping that this drop will be sufficient to move the remainder of these lines. There is still a good quantity of cantons both in the market and in the mills, and buyers show only moderate interest.

Production now centers on spring goods, with shantungs and sheers in the foreground. Inquiries and advance bookings on these lines have been fair, but not sufficient to still the anxiety of mill men regarding the possibility of shantung surplus. This question now is widely discussed, and sales executives of leading broadsilk houses this week said they expected spring shantungs to be highly competitive. Output may be larger than this year, they say, and the demand probably will not rise proportionately, due to the industrial depression and consumer tendency to economize. The one line which offers the most promise is the shantung print group, since it is not easy for one weaver to duplicate the particular print number of another company. Producers expect competition to center on plain shantungs.

Spot Buying Prevails

Cutters and retailers in the New York market this week placed considerable canton business, mostly for immediate use. These buyers are not enthusiastic about their own turnover and are determined to end the year with the minimum inventories. Metals are quiet. Winter sheers move unevenly, and staples are in moderate call.

Rayon Spot Call Improves

Buyers Will Not Cover Ahead, Due to Price Uncertainty

UNCERTAINTY among rayon consuming groups shows signs of waining, and producers are hopeful of a steady though light movement up to Dec. 15. Underwear mills and cotton weavers had held up on November coverage, anticipating that the first of the month might bring a reduction; however, when no change was announced, they began to take on assurance, and sales picked up this week. It cannot be said that manufacturers are confident; all buying is piecemeal, and carefully restricted to the actual requirements of the next few weeks. Prices continue uncertain, with much underselling, and the attitude of the rayon sellers is scarcely firm enough to stimulate buying at list.

Price Cut Looked For

Producers themselves do not expect to see any real improvement in market tone before the first of the year. Both buyers and sellers look for a price reduction in January and though there is nothing official to give that expectation definite basis, the sentiment is that January will bring such a development. Producers are far from satisfied with the present situation but are in doubt as to how it may best be alleviated. Even the most conservative admitted this week that "prices follow no rule" and that it is almost impossible to get listed charges. The yarn surplus causes increasing concern, and some producers lean to further curtailment. One of the outstanding companies in the industry is now understood to be operating at 50% of capacity. Observers comment that this would be a good gauge for the rest of the industry to follow, but it is scarcely likely that producers will cut to that extent. Numerous firms are still running dangerously close to 100% and relying on a loose price policy to make their heavy stocks move. Market demand is below normal for this period. There is the seasonal increase, due to holiday production, and the pick-up is in proportion to the rest of the year; however, it is much less than this time last year.

Low-Price Silk Competition

Broadsilk mills continue to buy very hesitantly, due to the competition of low-priced silk. The increasing importance of rayon among cotton mills is seen as significant. If silk continues its upward trend to the point where broadsilk mills return to normal production of rayon fabrics, the rayon market will be in a good position, having the newly augmented cotton demand and the silk demand as well.

Rayon Waste

Waste continues quiet, with no real demand manifest at any end. Dealers received some inquiries this week on open waste, and a few small consignments changed hands, but the buying tone was indifferent. Quotations are unchanged. Price is a minor element at present; there is little effort to drive bargains, the attitude of manufacturers being that they don't want to buy at any figure. Stocks in dealers' hands are moderate; there is little distress waste available and dealers are not pressed to effect clearance; for the most part, they are holding steady, pending improved demand.

General F-F Hosiery Cut?

Trade May Follow Lead of Mills in Reducing

A REDUCTION in women's full-fashioned silk hosiery prices by several companies which was expected to be followed up by a general cut by competing mills, supplied the chief topic of interest in the hosiery market this week. Some competing mills were disposed to view the cut with relief; spokesmen for these firms said the reduction had been rumored for some weeks and had held up buying and now, with the question settled, they look for better business. The general tone of knitter opinion on the subject, however, was one of regret at the continued downward tendency of full-fashioned quotations. Executives of several important mills said the industry was eliminating its own margin by this policy and also making for further uncertainty among buyers. They urged a stronger price policy.

Current full-fashioned demand is moderate; grenadine numbers show an increased movement and numerous mills which discontinued their grenadine stockings now are putting them back in the line. The pleasing quality and style-rightness of grenadines is viewed as making them an important Christmas gift proposition. Half-hose, especially in the popular-price range, is selling steadily. Here too, knitters look for good Christmas business.

Many Sweater Reorders

Heavyweight sweater movement continues to dominate in the outerwear market. Stores and retailers enjoy a good turnover and they are placing plenty of duplicate business.

A spell of four snappy weeks would do much to redeem the situation for sweater mills this year. Prices are steady, but the market hears whispers of possible reductions next week by mills that have heavy stocks on hand. This may not bring a general weakness as the market as a whole is not glutted, and continued movement at the present rate would take care of current output. Spring sweater interest centers on the Chicago openings next week; mills have practically completed their spring lines; there is a division of opinion regarding the prospects for polo shirts, but they are expected to be an important feature of the new lines.

Winter Underwear Moving

Heavyweight underwear is selling steadily, and most producers insist that they will not cut prices further until the end of the season. There is some unrest on that score among buyers, due to the reported unofficial cut by several mills. Demand itself would not seem to justify a cut, as the bulk of the trade is enjoying a good turnover. Mills which were selling ahead have caught up with orders for the most part, but spot buying continues active. Spring lightweight cottons move slowly, and rayons also have slackened. No real lightweight demand is looked for until cold weather moves the winterweights now in the stores.

Securities Hug Bottom Levels

Better Textile Outlook Does Not Overcome General Security Decline

POST-ELECTION reactions of the security markets were not favorable to holders. The general level of the New York Stock Exchange last Wednesday fell slightly below the previous low for the year touched on Oct. 22. Textile shares on New York exchanges were unusually inactive, indicating perhaps an unwillingness on the part of holders to sacrifice their holdings at a time when the textile horizon appears brighter than for many months. Appreciation of textile shares apparently awaits the broader turn of general business.

Further progress in development of the General Cotton Corp., the fine goods merger, is reported. J. Whitney Bowen, treasurer of the Flint Mills, Fall River, Mass., has been chosen president and F. L. Carpenter, treasurer of Davis Mills, is treasurer.

The Century Ribbon Mills, Inc., New York City, N. Y., reports for the nine months ended Sept. 30, 1930 net profit of $74,817 after depreciation and federal taxes, equal, after preferred dividends, to 6c. a share on the 100,000 shares of common, against $95,998, or 21c. a share in the first nine months of 1929.

Blumenthal Reports Profit

Sidney Blumenthal & Co., Inc., Shelton, Conn., and subsidiaries including the Saltex Looms, Inc., Bridgeport, Conn., show profits amounting to $142,160 after depreciation, but before Federal taxes, for the quarter ending Sept. 30. This compared with $111,889 for the previous quarter. Net profits for the third quarter of 1929 with Saltex Looms not included totaled $1,367,669, equivalent to $5.54 a share after the 7% preferred dividend. For nine months ending Sept. 30 including Saltex Looms, Inc., profit was $130,028 before Federal taxes.

For the 36 weeks ended Sept. 6, 1930 the Kendall Co., operating cotton mills in the North and South, reports net profit of $1,746, after all charges, including a special reserve of $130,000 for inventory shrinkage, but before dividends. Balance sheet as of Sept. 6 shows current assets of $6,773,112, current liabilities of $1,506,911, leaving net working capital of $5,266,201 and a current ratio of 4.49 to 1, compared with 3.1 to 1 on June 14, 1930, and 2.78 to 1 on Dec. 28, 1929.

Collins & Aikman Earnings

Collins & Aikman Corp. and subsidiaries, for the six months ended Aug. 30, 1930, report net income of $569,976, equivalent after preferred dividends to 41c. a share on the common stock. For the six months ended Aug. 31, 1929 net income was $1,160,057, equal after preferred dividends to $1.33 on the common stock. Current assets on Aug. 30, 1930 totaled $9,972,816 and current liabilities $887,973, a ratio of 11.2 to 1.

Fall River Dividends

Dividends for Fall River mills for the fourth quarter, 1930, as reported by G. M. Haffords & Co., show an average of 1.179% on invested capital. Details follow:

Names of Corporations	Capital	Rate	Amount
American Linen Co.	$800,000	0	.....
Barnard Mfg. Co.	1,250,000	0	.....
Bourne Mills	1,000,000	0	.....
Border City Mfg. Co.	1,800,000	0	.....
Charlton Mills	1,200,000	0	.....
Cornell Mills	600,000	0	.....
Davol Mills	1,500,000	0	.....
Flint Mills	1,300,000	1	$13,000
Luther Mfg. Co.	350,000	2	7,000
Laurel Lake Mills, pfd.	300,000	0	.....
Laurel Lake Mills, Com.	600,000	0	.....
Merchants Mfg. Co.	375,000	5	18,750
Narragansett Mills	600,000	0	.....
Osborn Mills	.....	...	.....
Pilgrim Mills	1,200,000	0	.....
Richard Borden Mfg. Co.	1,000,000	0	.....
Sagamore Mfg. Co.	3,000,000	2	60,000
Shawmut Mfg. Co., Pfd.	250,000	0	.....
Shawmut Mfg. Co., Com	350,000	0	.....
Shove Mills	1,200,000	0	.....
Stafford Mills	1,000,000	0	.....
Stevens Mfg. Co.	1,200,000	0	.....
Troy C. & W. Manuf'y.	300,000	0	.....
Union Cotton Mfg. Co.	1,200,000	15*	180,000
Weetamoe Mills	1,250,000	0	.....
	$23,625,000		$278,750

*In partial liquidation.

Another Quiet Week in South

CHARLOTTE, N. C.—The average bid price of 25 common stocks of southern cotton mills closed for the week ended Nov. 1 at $62.84 or a net decline of 40c. per share for the week according to the weekly summary of R. S. Dickson & Co.

Boston Stock Auctions

The following sales of textile shares were made at Wednesday's auctions:

Shrs.	Mill	Par	Price	Change
45	Associated Textile	...	35-36½	....
11	Naumkeag	100	84	....
100	Merrimack Mfg. com.	100	45½	—¼
1	Merrimack Mfg. pfd.	100	53¾	...
15	Farr Alpaca	100	70¼	+¼
172	Total			

QUOTATIONS

at close of business, Nov. 5, 1930
Prices cover average qualities unless otherwise stated

Cotton Goods

	Nov. 5	Oct. 29	Nov. 6, 1929
PRINT CLOTHS			
27 -in., 64x60, 7.60	4½c.	4½c.	5½c.
38½-in., 64x60, 5.35	5½c.	5½–5¾c.	7¼c.
39 -in., 68x72, 4.75	6½c.	6½–6¾c.	8¾c.
39 -in., 72x76, 4.25	7½c.	7c.	9½c.
39 -in., 80x80, 4.00	8–8¼c.	7¾–8c.	10¼c.
BROWN SHEETINGS			
36-in., 56x60, 4.00	6½c.	6¾–6¾c.	8¾–8¾c.
36-in., 48x48, 3.00	7½c.	7½c.	10½c.
37-in., 48x48, 4.00	6c.	6c.	8½c.
PAJAMA CHECKS			
36½-in., 72x80, 4.70	6½c.	6¾c.	9¼–9¼c.
36½-in., 64x60, 5.75	5¼c.	5¼c.	7⅞–7½c.
MISCELLANEOUS			
Drills, 37-in., 3 yd.	7⅛c.	7⅛c.	11c.
Denims, 2.20	12½c.	12½c.	16.33c.
Tickings, 8 oz	16 c.	16 c.	20–21c.
Standard prints	7½c.	7½c.	9½c.
Eastern staple ginghams, 27-in.	8 c.	8 c.	10 c

Cotton Waste

Peeler comber	9 —10
Peeler strips	8 — 8½
Sak. comber	8½ — 9
Choice willowed fly	4½ — 5½
Choice willowed picker	3 — 4½
Sak. strips	11 — 12
Linters (mill run)	2½ — 3½
White spooler (single)	8 — 8¼

Cotton Yarn

CARDED (Average Quality)
Double Carded 2c.–4c. higher according to quality

SINGLE SKEINS OR TUBES (Warp Twist)

4s to 8s	$0.20½– .21	22s	$0.23 – .23½
10s	– .21	24s	– .25
12s	– .21½	26s	– .26
16s	– .22	30s	.27½– .28
20s	.22½– .23	40s ex.qual.	.39 – .40

TWO-PLY SKEINS AND TUBES

8s-2	$0.21 – .21½	26s-2	$0.26
10s-2	– .21½	30s-2	.27½– .28
12s-2	.21½– .22	36s-2	– .34
14s-2	– .22	40s-2	– .36
16s-2	– .22½	40s-2 hi. blk.	– .40
20s-2	.22½– .23	50s-2	.44 – .45
24s-2	– .25	60s-2	.53 – .54

SINGLE WARP

10s	$0.21	24s	$0.25
12s	– .21½	26s	– .26
14s	– .22	30s	.27½– .28
16s	– .22½	40s ex. qual.	– .40
20s	– .23		

TWO-PLY WARPS

8s-2	$0.21½	24s-2	$0.25½– .26
10s-2	.21½– .22	26s-2	.26 – .26½
12s-2	– .22	30s-2	– .28
14s-2	.22 – .22½	40s-2 ordin.	– .36
16s-2	.22½– .23	50s-2	– .45
20s-2	– .23	60s-2	– .54

8s-2 and 4-ply skeins and tubes; tinged, 18–18½; white, 19½–20; waste 17–17½

HOSIERY CONES (Frame Spun)

3s	$0.20½	22s	$0.24
10s	.20½– .21	24s	.24½– .25
12s	.21 – .21½	26s	.25 – .26
14s	.21½– .22	30s tying	.27 – .27½
16s	.22 – .22½	30s reg	– .29
18s	.22½– .23	30s ex. qual.	.30½– .31½
20s	.23 – .23½	40s	.36 – .37

COMBED PEELER (Average Quality)

TWO-PLY—(Knitting Twist) Cones

29s-2	$0.35 – .36	60s-2	$0.55½– .57
30s-2	.40½– .41	70s-2	.65½– .67
36s-2	.41½– .42	80s-2	.78 – .80
40s-2	.43½– .44	90s-2	.94 – .95
50s-2	.48½– .49	100s-2	1.16 –1.20

WARPS, SKEINS AND CONES

TWO-PLY—(Warp Twist)

20s-2	$0.36 – .37	60s-2	$0.56½– .57
30s-2	.41 – .42	70s-2	.67 – .69
36s-2	.42 – .43	80s-2	.78 – .80
40s-2	.44½– .45	90s-2	.97 –1.00
50s-2	.49½– .50	100s-2	1.20 –1.25

SINGLES

12s	$0.29½– .30	30s	$0.39 – .39½
14s	.30 – .30½	38s	.42 – .42½
16s	.30½– .31	40s	.43 – .43½
18s	.31 – .31½	50s	.48 – .48½
20s	.32 – .32½	60s	.56 – .57
24s	.34½– .35	70s	.66 – .67
28s	.37½– .38	80s	.77 – .78

MERCERIZED CONES—(Combed, Ungassed)

26s-2	$0.52 – .53	90s-2	$1.31 –1.33
30s-2	.54 – .55	100s-2	1.61 –1.63
36s-2	.57 – .58	120s-2	2.01 –2.04
40s-2	.60 – .61	30s	.65 – .67
45s-2	.62 – .64	40s	.70 – .72
50s-2	.64 – .66	50s	.77 – .79
60s-2	.72 – .74	60s	.85 – .87
70s-2	.84 – .86	70s	.97 – .99
80s-2	.96 –1.01	80s	1.19 –1.21

Cotton Prices and Statistics

FLUCTUATIONS OF FUTURES

	Closed Oct. 30	For Week High	For Week Low	Closed Nov. 5	Net Chge.
November	11.00	11.00	10.91	10.71	—.29
December	11.20	11.31	10.90	10.92	—.28
January	11.44	11.44	11.02	11.12	—.32
February	11.49	11.49	11.18	11.18	—.31
March	11.58	11.77	11.24	11.32	—.26
April	11.69	11.69	11.41	11.41	—.28
May	11.81	12.03	11.48	11.56	—.25
June	11.90	11.90	11.63	11.63	—.27
July	12.00	12.19	11.64	11.80	—.20
August	12.10	12.10	11.79	11.79	—.31
September	12.20	12.20	11.95	11.85	—.35
October	12.14	12.14	11.90	11.93	—.21

SPOT FLUCTUATIONS FOR WEEK

(Middling)

	New York	New Orleans	Liverpool
Friday, Oct. 31	11.20	10.89	6.24
Saturday, Nov. 1	11.15	....	6.19
Monday, Nov. 3	11.20	10.89	6.25
Tuesday, Nov. 4	....	....	....
Wednesday, Nov. 5	10.95	10.63	6.14
Thursday, Nov. 6	10.85	10.53	6.03

FOREIGN COTTONS

Egyptian Cotton

Alexandria Exchange, Nov. 5	Change
November Sak	17.90 —0.50
December uppers	12.26 —0.28

Nov.-Dec. Shipment c. i. f. Boston.

(Tariff not included)	(Prices Nominal)
Fully good fair Sak	20.75
Fully good fair to good Uppers	14.50

(By Anderson, Clayton & Co.)

Foreign cottons	F. O. B. New York, Cents
Peruvian Tanguis Strict Middling	22
Peruvian Pima No. 1	24½
Peruvian Moderate Rough	18
Peruvian Full Rough	23
China Tientsin No. 1	10.85
India Rough	8½ to 11
India Smooth	8½ to 11

(By Gerald G. Loeb, New York.)

BASIS MIDDLING

	Saturday, Nov. 1	Saturday, Oct. 25
10 markets average	10.43	10.31
Memphis	9.80	9.70

PREMIUM STAPLES

First Sales from Factors Tables at Memphis

Grade Strict Middling	Prices Nominal
1⅛-in	12.00–12.35c.
1 3/16-in	13.75–14.00c.
1¼-in	18.75–19.00c.

CURRENT SALES

	For Week	Prev. Week	Week Before
Memphis total	39,660	40,179	42,389
F.o.b. included in total	31,137	35,256	38,026
10 markets	258,777	262,501	229,269

MEMPHIS RECEIPTS, SHIPMENTS, ETC.

	For Week	Last Year	Year Before
Net receipts	39,375	58,393	40,821
Gross receipts	69,122	117,927	80,479
Total since Aug. 1, net	300,711	425,333	257,435
Shipments	49,379	85,952	66,735
Total since Aug. 1	282,361	476,982	355,158
Total stock	331,203	327,217	200,964
Increase for week	19,743	31,975	13,738
Unsold stock in hands of Memphis factors	76,562	61,518	.....
Increase for week	6,165	.....	.....

AVERAGE PRICE NOV.–DEC. SHIPMENT
HARD WESTERN COTTON
F. o. b. New England

	Middling	St. Middling
1 1/16 in	13 –13½c.	13½–13¾c
1⅛ in	13½–13¾c.	14¼–14¾c.
1 3/16 in	14¼–15¼c.	15¼–16¼c.
1¼ in	19 –21c.	20 –22c.

Basis on New York, New December 10.89c.

SPOT FLUCTUATIONS AND STOCKS

Markets	Middling Oct. 29	Middling Nov. 5	Stocks Sales	Stocks This Week	Stocks Last Year
Galveston	10.40	10.75	4,007	602,660	498,925
New Orleans	10.31	10.63	22,457	609,189	440,034
Mobile	9.70	10.15	14,010	135,638	66,537
Savannah	9.96	10.29	2,776	279,125	83,536
Norfolk	10.19	10.56	1,996	86,521	48,076
New York	10.50	10.95	2,300	228,864	98,773
Augusta	9.81	10.25	1,854	140,641	100,965
Memphis	9.20	9.55	26,469	343,830	339,178
St. Louis	9.50	9.75	.....	2,117	3,283
Houston	10.25	10.60	49,621	1,412,231	984,986
Dallas	9.70	10.05	67,885	35,156	8,879

DIFFERENCES ON AND OFF MIDDLING

WHITE GRADES

	Dallas	Memphis	Montgomery	Augusta	Average
M. F	.75†	1.00†	.85†	.75†	0.38†
S. G. M	.60†	.75†	.75†	.63†	.70†
G. M	.50†	.50†	.60†	.50†	.51†
S. M	.35†	.25†	.35†	.25†	.30†
S. L. M	.75*	.75*	.65*	.50*	.68*
L. M	1.50*	1.75*	1.50*	2.25*	1.70*
S. G. O.**	2.50*	2.75*	2.50*	3.50*	2.83*
G. O	3.50*	4.00*	3.50*	4.50*	3.85†
YELLOW TINGED					
G. M	0.50*	0.75*	0.50*	0.50*	0.58*
S. M	1.00*	1.25*	1.00*	1.00*	1.05*
M.**	1.75*	2.00*	1.50*	1.50*	1.68*
S. L. M	2.50*	2.75*	2.25*	2.25*	2.37*
L. M.**	3.50*	4.00*	3.00*	3.00*	3.30
YELLOW STAINED					
G. M	1.50*	1.75*	1.50*	1.50*	1.58*
S. M.**	2.25*	2.50*	2.50*	2.50*	2.40*
M.**	3.00*	3.25*	3.50*	3.50*	3.23*
BLUE STAINED					
G. M.**	1.75*	2.00*	1.75*	1.75*	1.75*
S. M.**	2.25*	2.75*	2.75*	2.75*	2.48*
M.**	3.00*	3.25*	3.75*	3.75*	3.25*

**Grades not deliverable on contract. †On Middling *Off Middling.

Wool

OHIO, PENNSYLVANIA AND WEST VIRGINIA (IN GREASE)

Fine delne..	$0.30 –$0.31	⅜ blood.....	$0.29 –$0.30
Fine clthg ..	.24 – .25	¼ blood.....	.29 – .30
½ blood.....	.29 – .30		

TEXAS AND CALIFORNIA (CLEAN BASIS)

Texas, 12 months	$0.73 –$0.75		
California, Northern	.65 – .68		

PULLED– EASTERN (CLEAN BASIS)

A.A.	$0.72 –$0.75	B-Super...	$0.50 –$0.58
A-Super..	.63 – .65	C-Super....	.47 – .50

MONTANA, IDAHO AND WYOMING (CLEAN BASIS)

Staple fine	$0.73 –$0.75
Staple ½ bld.	.68 – .70
Fine and fine medium	.68 – .70
¾ blood	.58 – .60
½ blood	.56 – .58

MOHAIR—DOMESTIC

Best Carding	$0.32 –$0.35
Best combing	.45 – .48

MOHAIR FOREIGN (IN BOND)

Turkey fair, average	$0.25 –$0.28
Cape firsts	.25 – .28

FOREIGN CLOTHING AND COMBING (CLEAN BASIS IN BOND)

Australia:	
70s	$0.62 –$0.65
64s	.48 – .50
58s-60s	.40 – .42
(IN GREASE)	
Montevideo:	
58s-60s	$0.21 –$0.22
56s	.20 – .21
50s	.18 – .19
Buenos Aires:	
4s, 40-44s	$0.16 –$0.17
5s, 36-40s	.15 – .16

FOREIGN CARPET (GREASE BASIS IN BOND) SCOURED

Aleppo	$0.28 –$0.29
China: Combing No. 1	.16 – .17
China Filling Fleece	.15 – .16
Szechuen ass't	.15
Cordova	.15 – .16
Scotch black face	.19 – .23
East India: Kandahar	.23 – .24
Vican'r	.27 – .28
Joria	.27 – .29

Worsted Yarns

ENGLISH SYSTEM WEAVING

2-20s 36s	$0.87½– .90
2-24s 40s	.97½–1.00
2-26s 44s	1.05 –1.07½
2-28s 46s	1.10 –1.12½
2-30s 48s	1.15 –1.17½
2-32s 50s	1.20 –1.25

(Single yarns 5c. less than above)

2-36s, 58s	$1.32½–1.35
2-40s, 60s	1.40 –1.45
2-40s, 64s	1.45 –1.50
2-50s, 66s	1.60 –1.65
2-60s, 70s	1.95 –2.00

ENGLISH SYSTEM KNITTING

2-20s, 44s in oil	$0.90
2-20s, 48s in oil	– .95
2-20s, 50s in oil	.97½–1.00
2-20s, 56s in oil	–1.10
2-20s, 60s in oil	1.25 –1.27½
2-20s, 64s in oil	1.32 –1.35
1-15s, 46s dyed	1.10 –1.12½
1-15s, 48s dyed	1.12½–1.15
1-15s, 50s dyed	1.15 –1.17

(Oil yarns 17½c. less)

FRENCH SYSTEM

1-20s, 58s	$1.17½–$1.20
1-20s, 60s	1.22½– 1.25
1-18s, 64s, Dyed	1.50 – 1.52½
1-26s, 64s	1.25½– 1.27½
1-30s, 60s, Warp	1.32½– 1.35
1-30s, 64s, Warp	1.37½– 1.40
2-30s, 64s, Fancy mixes	1.67½– 1.70
2-40s, 64s, Zephyrs	1.55 – 1.60
1-50s, 66s	1.60 – 1.62½
2-50s, 66s	1.77½– 1.80
1-60s, 70s	1.95 – 2.00
2-60s, 70s	2.10 – 2.15

FRENCH SPUN MERINO WHITE

1-30s, 50-50-58s on cops	$1.00 –$1.02½
1-40s, 50-50-60s on cops	1.15 – 1.17½
1-40s, 50-50-64s on cops	1.17½– 1.20
1-40s, 50-50-64s Australian cops	1.25 – 1.30

Underwear mixes, 3c. additional.
Solid color, 35c. additional.

◆

Tops and Noils

TOPS—BOSTON

Fine (64-66s)	$0.95–$0.98
Half-blood (60-62s)	.88– .92
High ¾ blood (58s)	.80– .82
Aver. ¾ blood (56s)	.78– .80
Low ¾ blood	.73– .75
High ½ blood (50s)	.70– .72
46s S. A. and N. Z.	.60– .63
44s S. A. and N. Z.	.58 .60
40s S. A. and N. Z.	.58 .60

TOPS—BRADFORD, ENG. (OCT. 30)

Fine (70s)	29 d	¾ bld. (56s)	16½d
Fine (64s)	25 d	½ bld. (50s)	14 d
½ bld. (60s)	22½d	Cross-bred (46s)	11½d
¾ bld. low (58s)	19½d		

NOILS—BOSTON

Fine	$0.51–$0.53	High ½ bld.	$0.42–$0.45
Half-bld.	.48– .52	Low noils	.35– .38
Aver. ¾ bld.	.45– .48	Medium colored	.35– .37
Fine colored.	.43– .45		

Wool Substitutes

WOOL WASTE

Lap, fine white	$0.73 –$0.75
Lap, fine colored	.56 – .58
Hard ends, fine white	.60 – .62
Hard ends, ¼ blood white	.38 – .42
Hard ends, fine colored	.25 – .28
Hard ends, medium colored	.20 – .22
Card, fine white	.28 – .30
Burr, fine Carbonizing	.35 – .38

OLD WOOLEN RAGS (GRADED FOR MFRS.)

Merinos, Coarse Light	$0.06 –$0.07
Merinos, Fine Dark	.04½– .05
Merinos, Fine Light	.13 – .14
Serges, Blue	.06½– .07
Serges, Black	.07 – .07½
Serges, Red	.10½– .11
Knit, White	.23 – .24
Knit, red	.15 – .16
Knit, Light Hoods	.14 – .15
Worsted, Light	.05½– .06
Worsted, Blue	.07½– .08
Worsted, Black	.07½– .08

Silk Yarns

THROWN SILK (60 day basis)

	Nominal
Japan organzine, 2 thd. spec. gd. XX. sk. 85%	$4 25
Japan organzine, 2 thd. sp. crack. sk. 81%	3 85
Japan crepe, 3 thd. gd. XX bob. 83%	4.05
Japan crepe, 3 thd. sp. crack. bob. 81%	3.80
Japan crepe, 4 thd. crack bobbins, 78%	3 70
Japan grenadine, 4 thd. sp. grand singles, 87%	6 00
Japan grenadine 4 thd. 85%	5 50
Japan grenadine 3 thd. 90%	6 90
Canton crepe, 3 and 4 thd. ns. 14/16 on bobbins	2.85
Hosiery tram, 3 thd. Japan 90%	4 90
Hosiery tram, 5 thd. Japan, 85%	3 95
Hosiery tram, crack XX 78%	3.45

SPUN SILK YARNS (Terms: net 30)

40/2	$3 35	60/2	$3 65
50/2	3.55	62/1	2.50

Raw Silk

(60 day basis)
Prices Nominal

	13/15 White	20/22 White	20/22 Yellow
Super Grand, 86/88%	$3.20	$2.65	$2.75
Special Grand, 85%	2.90	2.65	2.75
Grand XX, 83%	2.75	2.55	2.65
Special Crack, 81%	2.65	2.45	2.55
Crack XX, 78%	2.55	2.40	2.40
Extra Extra, 73%	2 40	2.30	2.30
Best Extra, 68%	2.35	2.20	2.25

Canton filature, new style, 14/16	$1.85
Canton filature, new style, 20/22	1.75
Tussah filature, 8 cocoon	1.33

NATIONAL RAW SILK EXCHANGE

	Close Oct. 29	For the Week High	For the Week Low	Close Nov. 3	Net Chge.
November	2.40	2.40	2.28	2.35	—.05
December	2.35	2.35	2.24	2.29	—.06
January	2.29	2.29	2.22	2.24	—.05
February	2.29	2.29	2.21	2.24	—.05
March	2.30	2.30	2.22	2.24	—.06
April	2.29	2.29	2.21	2.24	—.05
May	2.29	2.29	2.21	2.24	—.05
June	2.29	2.29	2.21	2.23	—.06

Oct. 29 to Nov. 3—Total contracts, 409. Total number of bales, 4,090. Total approximate value $10,429.50
Trading unit is Crack XX 13-15, white, 78%.

Domestic Rayon

VISCOSE PROCESS

Denier	Filament	First	Second
50	14	$2.15	$1.95
75	18	1.60	1.50
75	30	1.70	1.60
100	18	1.25	1.15
100	40	1.30	1.20
125	35–50	1.20	1.10
150	24–30	.95	.90
150	36–40	1.00	.95
150	60	1.15	1.10
150	75–90	1.20	1.15
170	24–27	.95	.90
170	60	1.15	1.10
200	30	.90	.85
200	35–40	.90	.85
200	75–80	1.10	1.05
300	44–60	.78	.75
450	54–60	.78	.75
600	72–96	.78	.75
900	100–144	.78	.75

NITRO-CELLULOSE PROCESS

Denier	First Qual.	Second Qual.	Denier	First Qual.	Second Qual.
75	$1 60	$1.50	150	$0.95	$0.90
100	1 25	1.15	175	.95	.90
125	1.20	1.10			

CUPRAMMONIUM PROCESS

Denier	Filament	Price	Denier	Filament	Price
15	24	$3.10	65	45	$2.00
25	24	2.85	80	60	1.70
30	24	2.60	100	75	1.40
40	30	2.40	120	90	1.30
52	30	2.20	150	112	1.25
			180	135	1.10

ACETATE PROCESS

Denier	Price	Denier	Price
45	$2.25 2.75	120	$1.90
55	2.05–2.55	140	1.30
65	2.45	150	1.40–1.85
75	1.80–2.70	200	1 55
100	1.65–2.45	300	1 50

Rayon Waste

Prices Nominal

Open bleached waste	–$0.15
Open unbleached waste	– .13
Bleached thread waste (mfs.)	– .11
Bleached thread waste (misc.)	– .09
Colored thread waste	– .08
Colored clips	– .07

CONVERTED RAYON WASTE

Bleached tops	–$0.45
Unbleached tops	– .40
Bleached noils	– .15
Bleached garnetts	– .16
Unbleached garnetts	– .15
Colored garnetts	– .13

Silk Waste

Kibizzo Kakai Grand XX	$0.54
Kibizzo Kakai Triple extra	.48
Frison Grand Double	.52½
Pierced Cocoons	.53

Textiles on N. Y. Exchanges

The following shows the movements of the leading textile stocks listed on the New York Stock Exchange and Curb for the week ended Nov. 5.

	High	Low	Last Sale	Net Chge.
American Woolen, pfd...	20	18¾	18¾	— 1
Belding-Hemingway.....	4	3⅜	3⅜	— ⅛
Cannon Mills.....	20	19¾	20	+ ⅛
Century Ribbon.....	4	3¾	3¾	— ⅛
Collins & Aikman.....	13⅜	12½	13	— 1½
Consolidated Textile....	⅜	⅜	⅜	— ⅛
*Courtlaulds, Ltd.....	10½	10½	10½	.....
Durham Hosiery, pfd....	25	23	23	— 5
*Fabrics Finishing.....	¾	⅝	⅝	.....
Gotham Hosiery.....	9	7	7	— 2½
Industrial Rayon.....	48	45	46	— 1½
Kayser, Julius.....	18¾	18¼	18¼	— ½
Kendall, pfd.....	40	35	38	— 2
Mohawk Carpet.....	13½	13	13	— ½
Munsingwear.....	36	35½	35	— 1½
Pacific Mills.....	19¾	18¾	18¾	+ ⅝
Phoenix Hosiery.....	10⅝	10⅛	10⅛	+ ⅛
Real Silk Hosiery.....	37⅛	35	35	— 2⅛
*Tubize Chat B.....	4½	4	4½	— ⅛
United Piece Dye Works	25½	23¼	24	— 1¼

*Listed on Curb.

Fall River Mill Stocks

(G. M. Haffards & Co., Fall River)

	Bid	Asked
Algonquin Printing Co.....	300	320
Barnard Mfg. Co.....	..	10
Berkshire (com.).....	8	..
Berkshire (pfd.).....	50	56
Bourne Mills.....	10	..
Border City Mfg. Co.....	3	5
Charlton Mills.....	..	50
Cornell Mills.....	..	10
Davol Mills.....	..	5
Flint Mills.....	35	..
King Philip Mills.....	3	..
Laurel Lake Mills (com.).....	..	10
Luther Mfg. Co.....	..	85
Merchants Mfg. Co.....	20	..
Narragansett Mills.....	..	5
Pepperell Mfg.....	83½	85½
Pilgrim Mills.....	28	..
Richard Borden Mfg. Co.....	..	3
Sagamore Mfg. Co.....	57	..
Shove Mills.....	..	5
Stafford Mills.....	..	..
Stevens Mfg. Co.....	28	..
Union Cotton Mfg. Co.....	16	..
Wamsutta Mills.....	..	1

New England Textile Stocks

Quotations at "Public Sale" are based on last sales at Boston Public Auctions and Boston Stock Exchange. Bid and Asked prices are latest quotations of dealers.

	Public Sale	Bid	Asked
Am. Mfg. pfd.....	50	57	60
Amoskeag.....	8½	..	...
Arlington.....	22½	21	23
Associated Textile.....	36½	34	37
Bates.....	64	63	66
Berkshire, Associates, com.....	8½	7	9
Berkshire Associates, pfd.....	72	52	55
Bigelow-Sanford, com.....	35	...	...
Boott Mills.....	120¼	...	112
Edwards.....	80½	63	65
Esmond, pfd.....	102	100	102
Farr Alpaca.....	70⅛	68	71
Hamilton Woolen.....	40	35	38
Hill.....	18	14	18
Indian Orchard.....	20½	20	25
Ludlow.....	124	123	127
Merrimack, com.....	45½	44	48
Nashua, com.....	12½	13	15
Nashua, pfd.....	66	66	60
Naumkeag.....	84	80	83
Newmarket.....	27	13	16
Otis.....	43	48	...
Pacific.....	19¼	...	...
Pepperell.....	85	84	86
Plymouth Cordage.....	70½	63	67
York.....	8½	5½	7

Textile Calendar

National Association of Woolen and Worsted Overseers, 47th Annual Meeting, American House, Boston, Mass., Nov. 15, 1930.

The Textile Forum, N.A.C.M., overseers of carding, Boston (Mass.) Chamber of Commerce, Nov. 18, 1930.

Cotton Manufacturers Association of North Carolina, Fall Meeting, Carolina Hotel, Pinehurst, N. C., Nov. 21 and 22, 1930.

Ninth National Exposition of Power and Mechanical Engineering, Grand Central Palace, New York City, Dec. 1 to 6, 1930.

The Textile Forum, N.A.C.M., overseers of spinning, Boston (Mass.) Chamber of Commerce, Dec. 9, 1930.

The Textile Forum, N.A.C.M., master mechanics, Boston (Mass.) Chamber of Commerce, Jan. 13, 1931.

The Textile Forum, N.A.C.M., warp preparation and weaving, Boston (Mass.) Chamber of Commerce, Feb. 10, 1931.

The Textile Forum, N.A.C.M., overseers of finishing, Boston (Mass.) Chamber of Commerce, March 10, 1931.

Knitting Arts Exhibition, Commercial Museum, Philadelphia, April 13 to 17, 1931.

Exposition of Chemical Industries, Grand Central Palace, New York, May 4 to 9, 1931.

TEXTILE WORLD Cotton and Wool Indexes

COTTON INDEX NUMBERS

Date	Cotton	Yarns	Gray Goods	Colored Goods	Aver. for Cloths	Group Average
July 31, 1914	100	100	100	100	100	100
1925						
January....	192	197	195	173	184	187
April.....	196	194	193	180	187	188
July.....	197	183	185	176	181	182
October....	174	189	193	178	186	186
1926						
January....	167	175	177	162	170	171
April.....	153	163	161	155	158	159
July.....	149	149	151	141	146	147
October....	106	141	147	144	146	143
1927						
January....	107	134	140	140	140	138
April.....	118	136	143	142	143	140
July.....	143	149	156	145	151	150
October....	168	176	184	169	176	176
1928						
January....	151	163	166	166	166	165
April.....	164	160	160	165	162½	162
July.....	174	167	165	168	166½	167
October....	157	161	162	164	163	162
1929						
January....	162	166	158	169	163½	164
April.....	163½	164	157	173	165	165
July	149	160	149	166	158	158
October....	147	160½	155	161	158	158
1930						
January....	138	149	141	157	149	149
February...	125	144	134	157	145	145
March.....	120	138	130	157	144	142
April.....	131	139	129	156	143	142
May.....	131	136	129	156	142	141
June.....	116	127	120	150	135	133
July.....	105	120	119	142	130	128
August.....	96	115	114	142	128	124
September...	87	112	114	136	125	121
October.....	85	111	115	125	120	117

WITH the exception of grey goods, which advanced one point, further declines were registered in the cotton index numbers in October. Raw wool and worsted yarns were lower also, and tops and cloths were unchanged.

While the raw cotton monthly average is lower than September, it scored a sharp advance in the fourth week of October, the index for that week being 90, or five points above the monthly average and eight points higher than in the last week of September. Cotton yarns also scored an advance in the fourth week of October to 113, or 3 points above the average for the month and 1 point above the last week of September. While colored goods show a decline of 11 points from the September average, they are unchanged when compared with the fourth week of that month.

Prices of domestic wool were somewhat lower during the latter part of October and the index of this group declined to 123 in the fourth week of the month. Prices of foreign wools, crossbreds in particular, are at or close to the importing level, and the present unfavorable price outlook in the primary and secondary markets will probably bring about a further slight decline in domestic wool prices during November.

WOOL INDEX NUMBERS

Date	Wool	Tops	Yarns	Cloth	Group Aver.
July 31, 1914	100	100	100	100	100
1925					
January.....	215	213	211	229	221
April.....	219	234	230	241	235
July.....	216	217	216	239	227
October.....	216	212	212	227	220
1926					
January.....	215	213	211	229	221
April.....	181	193	198	224	208
July.....	173	184	189	215	199
October.....	178	186	193	209	198
1927					
January.....	178	187	190	209	198
April.....	177	182	184	211	196
July.....	180	183	183	211	196
October.....	185	185	189	211	199
1928					
January.....	194	193	186	212	201
April.....	199	206	198	215	208
July.....	204	206	203	214	209
October.....	197	197	203	212	206
1929					
January.....	199	198	201	211½	206
April.....	187	189	198	211	202
July.....	169	170	188	211	194
October.....	164½	169	188	211	194
1930					
January.....	148	161	177	211	188
February....	138	150	173	209	183
March.....	132	144	169	202	177
April.....	127	139	164	202	175
May.....	124	136	159	202	173
June.....	124	135	160	202	173
July.....	125	135	158	200	171
August.....	125	135	158	200	171
September...	125	135	157	200	171
October.....	124	135	154	200	170

Union Protests Berkshire Price-Wage Reduction

Announcement by Berkshire Knitting Mills, Reading, Pa., of a reduction in the price of women's full-fashioned hosiery, and the unconfirmed report that this company also plans a wage reduction to be put into effect shortly have drawn an answer from the American Federation of Full-Fashioned Hosiery Workers. In the current issue of "Hosiery Worker," that organization's mouthpiece, there is an editorial protesting against continued cutting of full-fashioned hosiery prices.

"The proposed Berkshire cuts," the editorial reads, "seem on the face of things to be extremely dangerous for the whole trade. It is quite impossible for the trade to find a way out of the dilemma unless group policies instead of individual policies prevail."

The editorial ends with an appeal to the trade as a whole to make strenuous attempts, for stability, and protests against what is termed "the supine acceptance of a price-cutting-wage-cutting policy as the only policy for the industry."

The new hosiery prices announced by Berkshire follow: No. 816—42-gauge, 7-thread, cotton welt and foot, $6.75.

No. 767—42-gauge, 7-thread, silk welt, cotton foot, $7.25.

No. 774—42-gauge, 4-thread, picot top, $7.75.

No. 736—45-gauge, 4-thread, picot top, $9.

No. 803 — Grenadine, 42 - gauge, 5-thread, $8.25.

No. 804 — Grenadine, 42 - gauge, 4-thread, $8.75.

No. 702—Bemberg, lisle top, lisle foot, $5.

Dept. of Agriculture to Quote Linters on Six Markets

Quotations on cotton linters for Charlotte, N. C., Atlanta, Memphis, New York, Little Rock, Ark, and Dallas, Tex., are now available for oil mills and linter organizations, according to information received from J. G. Martin, who is in charge of the Charlotte office of the United States Bureau of Agricultural Economics.

The reports will be issued by the bureau from Washington every Thursday, and will be mailed to those interested, Mr. Martin said.

The quotations will cover the grades from No. 1 to No. 7 and also hull fibre. They will be based upon the official standards for grade and character of linters, developed by experts of the department.

How Profitable Are Textiles?

(Continued from page 27)

percentage of earning assets. A return of 7% on capital investment appears low when compared with the returns of 10% or more which commonly figure in discussions of what earning rate should obtain. Our two years of recorded experience failed to produce a successful section in any manufacturing industry earning in excess of 9.1% on total assets.

We have in Table II a summary of the profit situation in textiles for the two years, 1926 and 1927, insofar as our measures of profitableness may have revealed it.

In 1926, 62% of the assets in the textile industries were used in doing a business which represented 69% of the total business of the industry; in 1927, 78% of the assets accounted for 80% of the gross business. Or to put in another way, for every 1% increase in profitable assets, 1926 to 1927, there was an increase of 0.7% in volume of profitable business. Considering the low profitable portion of both business and assets in 1926, it is perhaps noteworthy that the textile industry was able to increase these profitable portions without a decrease either in profit margin on sales or the profit return on assets. It may not be unusual to obtain a 7% return on 62% of the industry's assets, but it is an achievement to increase that percentage to 78%, and continue to earn the same profit return.

To say that more than 60% of the assets of the textile industry earn profits of 7% is barely more than no answer at all to our query how profitable are textiles? This ratio commits the usual sin of any average or total in hiding from us the range and distribution of the earnings ratios among the many industries that may be classed as "textile." A more adequate and more useful description of the profitableness of the textile industries awaits more data.

Modern Machinery Would Help Cotton Goods, Says Standard Statistics Co.

"CHIEFLY because prices are traditionally low, we advise that needs be covered through the early months of next year; we see little probability however of a near term sustained upward movement." This statement is one made by Standard Statistics Co., Inc., in its "Standard Trade and Securities" covering cotton and cotton goods.

It is stated in this survey that demand for cotton goods has improved moderately in the last six weeks, partly in accordance with strictly seasonal trends and partly in reflection of accomplishments already achieved by curtailing outputs.

Curtailment is the outstanding factor at present, and, if continued over a long enough period of time, will prove to be one of the most powerful factors in bringing about the long looked for change in this trade. Standard Statistics Co. says that cotton spinning tradition, however, prompts caution in becoming too optimistic at this time. Depression exists in textile industry throughout the world, the report says, and its writer sees no immediate sustained betterment in world conditions.

Despite these ifs and buts, the company feels that recent developments in the cotton and cotton goods trade indicate that greater potentialities for long term basis improvement now exist than for a number of years. Overproduction has long been one of the faults, the result of uncoordinated and inefficient control.

"It is evident that curtailment must be continued over a long period" says the bulletin, "and upon this depends the fate of reasonable earnings for the leading companies in the industry." It is pointed out that write-offs due to drastic decline in price of cotton will work against those firms which might otherwise have accumulated profits in 1930 annual reports.

The bulletin says that if these things are done, and, in addition, if manufacturers of cotton goods will "substitute modern productive equipment for the relatively obsolete equipment loomage now generally in use, we could feel fully justified in forecasting a complete renaissance of this essential industry."

U. S. Testing Co. Takes Over Silk Exchange Inspection

With the transfer last Saturday of the raw silk inspection bureau of the National Raw Silk Exchange to the United States Testing Co., Inc., official testing house of the Silk Association of America, Inc., the most completely staffed raw silk testing laboratory in the country now is housed under one roof, equipped to test and grade raw silk prior to its manufacture into silk fabrics and hosiery. The U. S. Testing Co. now is designated as official inspectors and licensed laboratory and warehousemen for the Exchange, continuing also in the capacity of official testing house for the Silk Association.

Speakers at the ceremony marking the formal transfer of the inspection bureau to the Testing Company were D. E. Douty, manager of the testing company, Douglas Walker, representing the National Raw Silk Exchange, and Fred K. Schmutz, chief of the bureau.

Much of the confusion which exists in the grading of raw silk will be removed, speakers brought out, with the centralization of these two inspection departments under one control.

Bemberg Adds Sales Representative in South

American Bemberg Corp. has placed an additional man on its sales staff in the South, according to J. C. Inge, sales manager. Charles J. Hall, Jr., will cover Tennessee, Georgia, Alabama and Mississippi, with headquarters in the Provident Building, Chattanooga, Tenn. Gordon Hope, who has been covering this territory as well as Virginia, North Carolina and South Carolina, will now confine his work to the latter three States. His offices will continue to be at Greensboro, N. C., in the Greensboro Bank & Trust Co. Building.

New England Conference to Meet Nov. 20 and 21

Formal call to the Sixth New England Conference was issued Oct. 23 by President Redfield Proctor of the New England Council to the 900 industrial, commercial, and agricultural organizations of the six New England States. The Conference will be held in Boston, Nov. 20-21.

Recalling President Hoover's assertion that this country need not "wait upon the recovery of the world," President Proctor's statement declares that, likewise, New England business organizations "should not delay in lending their best brains and their best leadership to the task of preparing for the better business ahead."

The Conference this year will mark the fifth anniversary of the meeting in Worcester in 1925, called by the six New England Governors, at which the New England Council, all-New England development organization, was formed. Methods of dealing with present business problems and the question of New England's objectives in the next five years will form the subject matter of the Conference discussions.

Preparing for Manufacturers Meeting at Pinehurst

The fall meeting of The Cotton Manufacturers Association of North Carolina which will be held at Pinehurst, N. C., Nov. 21 and 22, as announced last week in TEXTILE WORLD, will be featured by a golf tournament on Friday. The first session of the convention will open with the banquet meeting at 7:45 p.m. Friday, while the business session is scheduled for Saturday morning. Hunter Marshall, Jr., secretary-treasurer of the association, has requested that reservations be made promptly at the Carolina Hotel, Pinehurst, N. C.

D. B. F. Division of S.T.A. Will Meet Early in December

CHARLOTTE, N. C.—The Dyers', Bleachers' and Finishers' Division of the Southern Textile Association will meet at the Hotel Charlotte, early in December. The program is now being worked out and will be announced later, Walter C. Taylor, secretary-treasurer, of the association stated. Technical problems will be discussed at this meeting, under direction of Paul Haddock, chairman.

Raw Silk Decline Aids Commission Throwing

Not in several years has the commission throwing branch of the silk industry been in as splendid a position as it is today both in actual work and in prospects for considerable time ahead, H. A. Reiling, chairman of the commission throwsters division of the Silk Association of America, Inc., reports. Reasons given for this stimulus are low price levels for raw silk resulting in use of a greater poundage of silk in weaving, extension of silk fabrics in a wider field, occupation of many spindles with the throwing of grenadine yarn, and indications of a good spring season in high twist yarns for georgette and chiffon fabrics.

Tentative Date Set for Next Southern Textile Exposition in 1932

The tentative date for the next Southern Textile Exposition has been set for the week of Oct. 17, 1932, it is reported. Officials of the Textile Hall Corp. are stated to have set this date, subject to later change.

Cotton Glove Manufacturers To Meet

National Association of Cotton Glove Manufacturers will hold their annual convention at Hotel Sherman, Chicago, Nov. 14, according to an announcement made by H. M. Smaltz, secretary-treasurer. It is expected that one of the subjects that will be discussed will be standardization of sizing of cotton, leather palm, and jersey gloves. The opening of 1931 lines will also be considered.

Machine Tool Builders to Be Represented at Power Show

Large boilers, air preheaters and furnaces are rapidly and economically constructed today with a minimum of labor due to highly perfected machine tools that will be a feature of the Power Show to be held at Grand Central Palace, New York, Dec. 1 to 6. Over 50 tool and machine tool manufacturers will exhibit. These exhibits will be helpful to manufacturers and to operating engineers.

Commission Manufacturers Establish Agency in New York

O. C. Worf, executive secretary of the Commission Manufacturers League of America, Inc., of Paterson, N. J., announces that the next meeting of the League will be held Thursday evening, Nov. 13, at Modern Woodmen Hall, Paterson. Mr. Worf also announces that the League has established a cooperative agency in New York City, for the purpose of obtaining silk commission weaving work for members; the agency is located at 1441 Broadway.

Mallinson Opens Los Angeles Office

H. R. Mallinson & Co., Inc., have opened a new sales office at 403 West 8th Street, Los Angeles, Calif., under the supervision of William McCaughin, according to announcement by E. Irving Hanson, vice-president. The establishing of this office will enable the Mallinson organization to give additional service to its large following of retailers and cutters on the Pacific Coast. Mr. McCaughin has been connected with Mallinson for 15 years. Formal opening of the Los Angeles office will take place within the next week.

Schwarzenbach Huber Shows Spring Line

The spring 1921 line of Schwarzenbach Huber Co., New York, which has just been placed on sale includes numerous novel prints, chiffons and sport silks for Palm Beach. The "Authentic" prints include the pure dye group and a group of weighted silks and a series of Darbrook Prints for popular priced dresses. Dots are used throughout the collection, most being new in treatment; such as the "Trio dots." Several prints add a dimension of depth in illusion.

Washable sport fabrics include the shantungs, crepe de Chines and new flat crepes—and several variations of these such as striped and bordered shantung. Senoussi and Chuddah also Kerah have first place in the shantungs.

Boston Wool Receipts

Receipts of domestic and foreign wools at Boston, also imports at Philadelphia and New York for the week ended Nov. 1, based upon data compiled by the Market News Service of the Bureau of Agricultural Economics, Department of Agriculture, are as follows:

	Week Ended Nov. 1	Total to Date 1930	1929
Domestic	1,037,000	335,041,000	195,412,000
Foreign	91,000	55,417,000	87,006,000
Total	1,128,000	390,458,000	282,418,000
IMPORTS AT PRINCIPAL PORTS			
Boston	91,000	55,417,000	87,006,000
Philadelphia	312,000	39,346,000	75,599,000
New York	566,000	38,381,000	64,004,000
Total	969,000	133,144,000	226,609,000

Asserts 60% of Trade Backs Hosiery Exchange Plan

Sixty per cent of the industry's knitting machine capacity is now represented by the subscriber list of the proposed Full-Fashioned Hosiery Exchange, and this enrollment will be increased to 80%, according to agreement of the Exchange organization committee, it was announced by Julian Armstrong, of Chicago, director of organization, following a meeting in New York City.

Du Pont's Acetate Department to Be Known as "Acele"

The acceptance of the trade-mark name "Acele," for the new acetate yarn manufactured by the Du Pont Rayon Co., has led to the announcement that the department manufacturing and selling Acele will be known as the Acele Department.

Sloane Opens Exhibition of 18th Century Textiles

W. & J. Sloane opened an exhibition of Toiles du Jouy and other old textiles, at the new gallery of their building, Fifth Ave. and 47th St., New York, on Oct. 27. The materials are all of the 18th and early 19th centuries. The exhibition will continue until Nov 29.

Mills Spinning Hand Knitting Yarn of Rabbit Wool

Culmination of a series of experiments continued for more than a year has been the production of a new yarn to be known as "Pengora." The Pendleton Woolen Mills and Oregon Worsted Mills, of Portland, Ore., working in conjunction, are turning out this yarn from wool of the Angora rabbit. It is especially for hand knitting.

While there is a limited quantity of Angora rabbit wool available, as compared with other materials for yarns, this new product has been well received on the Pacific Coast. The problem of securing the market for Angora wool yarn in this country has been the subject of an investigation by C. M. Bishop and R. T. Bishop.

While Angora rabbit wool is in the luxury class of merchandise at the present time, it is the aim of the Bishops, with further experimentation now in progress, to produce the yarn at a cost that will bring it into use for undergarments.

Angora rabbit yarns have in the past been spun principally in France and England, and it is said that the product received in this country, for the most part, has been a mixture of 80% rabbit hair and 20% silk. The opportunity for utilizing American-grown rabbit wool developed when domestic growers are reported to have lost much of their market when British manufacturers were required to discontinue buying rabbit wool from outside the British Empire.

To Consider Simplification of Textile Mill Accessories

Tentative plans looking to the simplification and standardization of bobbins, spools, shuttles, spindles, paper cones and other textile machinery parts will be discussed at a meeting to be held at the Hotel Astor, New York, 10 a.m., Nov. 12. George Schuster, division of simplified practice, Bureau of Standards, will conduct the conference.

Lowell Football Squad to Be Feted by N. Y. Alumni

The football team of Lowell (Mass.) Textile Institute will play Upsala College at East Orange, N. J., on Nov. 15. The New York Alumni will be hosts to the Lowell squad at dinner and reception after the game at the Montclair (N. J.) Athletic Club. The committee in charge comprises Herbert Currier, William Brosnan, Lawrence Gotschalk and Ira Hurd.

Photomicrographs! What Good Are They?

(Continued from page 34)

is frequently far below what it should be. To avoid unpleasant controversies with the importer, the camera is called in to reproduce in black and white what was apparent to the eye of the inspector.

To demonstrate the way in which photomicrographs are proving their worth, a number of representative pictures have been selected which show the points at issue more clearly than would be possible in a long and detailed verbal explanation. These illustrations were secured through the courtesy of Hatch & Reutlinger, Armion Textile Corp., and Cravenette Co., U. S. A. It would be possible to multiply these illustrations and their application indefinitely, but those chosen should be sufficient to show the practical value of this method of explaining textile defects, and its possibilities for future use and development.

Business News

Willard Dow Heads Chemical Plant

At a meeting of the board of directors of the Dow Chemical Co., Midland, Mich., recently, Willard H. Dow was appointed president and general manager of the company, to succeed Dr. Herbert H. Dow, deceased. For eight years Mr. Dow has been a member of the board of directors, and for four years has acted as assistant general manager. Mr. Dow is a graduate of the University of Michigan, having received a Bachelor of Science degree in chemical engineering from that university in 1919. His practical work in the plant has made him familiar with the manufacturing processes used in producing more than 150 chemical products.

Lumber Co. Division Buys "Pioneer" Picker Stick

The Pioneer Pole & Shaft Co., of Memphis, Tenn., has sold its "Pioneer" picker stick business to the Hickory Products Division of the Pearl River Valley Lumber Co., of Canton, Miss., it is announced. The Hickory Products Division, which is a separate and distinct unit, with its own logging and milling facilities, making various finished hickory products, is said to own the largest tracts of standing hickory timber in the country. This division will manufacture the "Pioneer" picker sticks, as formerly produced by the Pioneer.

Westinghouse Elec. & Mfg. Co. Reports $11,355,619 Net

The nine months' statement of the Westinghouse Electric & Manufacturing Co., East Pittsburgh, Pa., for the nine months ending Sept. 30, shows a net income of $11,355,619 against $19,796,819 for the same period in 1929. Orders received this year total $132,715,293 against $185,625,135 last year. Sales billed total $137,446,908 this year against $159,545,778 last year. The net income above stated is the total after depreciation, reserves and taxes were deducted.

Plan Steel Tank Design Prize Contest

To stir interest in the beauty of commercial structures a competition for improved design in elevated steel tanks, is announced by the Chicago Bridge & Iron Works. Prizes totaling $4,000 are offered for the best eight renderings. The entries will be received anonymously and judged by a jury of award consisting of Howard Cheney, president of the Chicago Chapter of the A.I.A., R. W. Zimmerman, architect of Chicago, and George T. Horton, president of the Chicago Bridge & Iron Works. This competition is open to architects, engineers and draftsmen.

Oxy-Acetylene Progress Reviewed

The progress made in the oxy-acetylene industry during the past eight years is the theme of editorial comment in "Oxy-Acetylene Tips," a trade monthly published by the Linde Air Products Co., of New York City. The November issue of this publication marks the one-hundredth issue, and in an editorial entitled "Our One-Hundredth Issue," the oxy-acetylene industry is congratulated for the chemical and industrial progress it has made since the publication was started eight years ago.

International Acetylene Ass'n Meets in Chicago Nov. 12-14

The thirty-first annual convention of the International Acetylene Association will be held in the Congress Hotel, Chicago, Nov. 12-14. The major portion of the program will be devoted to oxy-acetylene welding and cutting, and special sessions have been arranged on metal working industry, building construction, building piping, and the distribution of oil, gas and water. Among the speakers will be numerous prominent figures in the acetylene field.

$17,500 Prizes in Lincoln Arc Welding Contest

Lincoln Electric Co., Cleveland, O., sponsors of the second Lincoln arc welding prize competition, announce that $17,500 in prizes will be awarded to winners of this contest. The prizes will go to those submitting the forty-one best papers on the advantages of arc welded construction. The jury of awards will be composed of the electrical engineering department of Ohio State University.

General Electric Engineer Receives McGraw Award

Lee F. Adams, commercial engineer of the General Electric Co., Schenectady, N. Y., has been awarded the Manufacturers Medal and Purse for 1930, given under the James H. McGraw Award. This recognition is the result of "outstanding and unselfish service to the manufacturing branch of the electrical industry."

Enters Business on Own Account

J. Fred Welch, formerly associated with C. L. Upchurch & Sons, machinery dealers, of Charlotte, N. C., and Athens, Ga., has severed his connection with that company and has entered the machinery business on his own account with headquarters for the present at 1426 Park Drive, Charlotte, N. C.

New Line For Glyco Products Co.

Potassium abietate is now being produced by the Glyco Products Co., Bush Terminal, Brooklyn, N. Y. It is classed chemically as a soap and is sold with as low moisture content as 15%. It is soluable in cold water and may be used in place of rosin soaps.

Locates at Atlanta

M. B. Hodges, who was recently appointed southern representative for the Shambow Shuttle Co., has established headquarters at Atlanta, Ga.